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04/14/2006 11:01 AM

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bcc
Subject Omega Site: MIP/VP Tech Memo (Third Phase)

History:  This message has been forwarded.

Chris:

Attached for your review is a Technical Memorandum prepared by CDM on behalf of OPOG. The Technical Memorandum presents the results of the MIP/VP program that was conducted during the period February 27 to March 9, 2006.

We look forward to discussing the results of the MIP/VP program during our conference call on Tuesday April 18, 2006.

If you have any questions or require additional information, please contact me.

Sincerely,
Edward Modiano
Project Coordinator
Omega Chemical Site PRP Group
619-991-9074

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Memorandum

To: Chris Lichens - USEPA

From: Sharon Wallin, P.G. - CDM
Dave Chamberlin – CDM

CC: Michael Smith – CDM
John Eisenbeis - CDM

Date: April 14, 2006

Subject: On-Site Soils RI/FS Work Plan Addendum No. 2
Summary of Additional Findings from Soil Vapor and MIP Sampling
Omega Chemical Superfund Site
10500-37240-T2.OSS.OSS3
10500-5.2.3

1.0 Objectives

The purpose of this memorandum is to present the results of the February and March 2006 Membrane Interface Probe (MIP), soil vapor and soil sampling field programs, and to determine if the objectives defined in the Final On-Site Soils RI/FS Work Plan Addendum No. 2, dated August 17, 2005 (Work Plan) have been achieved.

Specific objectives of this memorandum include:

- Present updated preliminary findings based on evaluation of the MIP, soil vapor and soil matrix results obtained to date.
- Describe observations and information concerning the Medlin & Sons building located immediately to the northwest of the Omega site.

2.0 Field Program Summary

The third round of MIP sampling was conducted between February 27 and March 2, 2006. A total of six probes (MIP- 25 through MIP-30 with one re-probe) were advanced using a

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Geoprobe direct-push rig equipped with a soil conductance probe and MIP sensor. Two of the borings reached to a depth of about 60 feet (MIP-29 and 30), and the other four borings encountered refusal at approximately 55 feet.

Figure 1 shows the locations of all 2005 and 2006 MIP borings. The locations and elevations of the MIP borings were measured relative to existing site features and wells with surveyed elevations at the completion of the field work to allow incorporation of the data into the site conceptual model.

The MIP investigations provide logs of total VOCs relative concentrations using three detectors, and a continuous record of soil conductivity. The electron capture detector (ECD) is the most sensitive detector and provides a measure of the total chlorinated hydrocarbon compounds that are volatilized at the heated sensor probe. A photo ionization detector (PID) detects the higher concentration range for the organic compounds, while the flame ionization detector (FID) will detect other organic compounds, such as methane. The soil conductivity probe measures the electrical conductivity of the soil, which is related to the presence of fine-grain size and clay materials. A low soil conductance indicates a sandy or silty facies with fewer clays, while a higher soil conductance is indicative of clayey material. Additional operational data are also recorded, including the temperature at the MIP tool and the logging speed. Logs showing the results from the 6 MIP borings are presented in Attachment A.

Twenty six soil vapor samples and five duplicate samples were collected from eight locations (VP-20, -21, -22, -23, -24, -25, -28 and -29) during the period from March 6 through 9, 2006. Access could not be obtained for three locations (VP-26 and VP-27 in the median of Whittier Boulevard, and MIP31/VP30 in the northeast corner of Putnam Street and Washington Boulevard) proposed in the February 24th response to EPA's comments to the January 27, 2006 memorandum.

All of the samples were analyzed for VOCs using EPA Method TO-15. The locations of the March 2006 soil vapor probe locations are provided on Figure 2. These locations were obtained in the field by measuring distances to site features, thus the locations are accurate to within a few feet for the northing and easting coordinates.

Sixteen soil samples and two duplicate samples were collected from four boreholes (MIP-8-B4, MIP-21-B7, MIP-22-B5, and VP-21-B6) during the period from March 7 through 9, 2006. All of the soil samples were analyzed for VOCs using EPA Method 8260B; total porosity/bulk density using API RP40, moisture content using ASTM D2216, effective permeability to water/hydraulic conductivity using ASTM D5084, total organic content using EPA Method 9060; and 1,4-dioxane using EPA Method 8270CM. Field parameter results are presented in Attachment B.

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3.0 Preliminary Evaluation

MIP Results The February/March 2006 MIP logs are provided in Attachment A. Evaluation of the September 2005 MIP soil conductivity logs (the initial MIP borings) identified several characteristics that extend over the area of that investigation. In particular, as was described in the November 1, 2005 memorandum to EPA:

The interval from land surface to approximately 30 feet exhibits interbedded high and low soil conductivity materials. A distinctive high soil conductivity marker bed, interpreted as a clayey zone, is apparent on all of the MIP borings that penetrated to a sufficient depth. This zone ranges from 3.5 to 11 feet thick and was typically encountered starting at a depth of 31 to 34 feet. This will be referred to as the "30 foot clay". The marker bed has a characteristic double peak signature, with a lower conductivity interbed in the middle of this unit likely consisting of a siltier lithology. Nearly all borings on the site show a 1 to 4 foot thick unit with a lower soil conductance, interpreted to be a sandy to silty lithology with less clay, overlying this unit. A similar lower conductance unit underlies the clayey zone at most locations on site. Another feature observed on the soil conductance logs is the presence of low soil conductance materials located near the water table.

This distinctive 30 foot clay was also encountered at all of the new MIP borings that were completed in February/March 2006. Lower conductance materials interpreted as sandy intervals were encountered below the 30 foot clay and above the water table at the following probe locations:

- MIP-25 48 to 52 feet
- MIP-26 40 to 44 feet
- MIP-27 51 to total depth (approximately 53 feet)
- MIP-28 48 to total depth (approximately 53 feet)
- MIP-29 35 to 36 and 54 to 56 feet
- MIP-30 few, if any, sandy intervals below the 30 foot clay

One of the primary objectives of the Work Plan was the identification of potential sources of contamination at the site and the pathways of migration. The MIP results for this round of sampling do not show the presence of elevated relative concentrations in the upper 10 feet of material.

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Relative elevations have been surveyed at the site, allowing evaluation of the configuration of the 30 foot clay. Figure 3 shows a contour map of the top elevation of this zone, indicating that this surface slopes toward the west and southwest from the suspected source areas near MIP-3. This preliminary evaluation suggests that the 30 foot clay has played a major role in defining the migration pathways for contaminants released at the site. The thickness of this zone ranges from about 3.5 to 11 feet. The site data suggest that fluid releases from sources migrated vertically downward to the 30 foot clay, then dispersed laterally on this lower permeability interface, while at the same time infiltrating through this zone. Soil concentrations at MIP-3 show high concentrations from land surface to near the water table, suggesting that migration through this layer occurred. The configuration of this surface appears to bifurcate the potential migration pathways for contaminants. Contaminants (potentially in the form of perched liquids) present along the northern property line for the Omega site are likely to follow a westerly pathway, while contaminant releases near the former loading dock in the Omega building may tend to follow a more southwesterly path. The 30 foot clay appears to at least partially isolate the vadose zone into two intervals, with shallow contamination volatilizing into the upper portion of the vadose zone, while contaminants in groundwater and the zone above the capillary fringe also provide a source of soil gas contamination below the 30 foot clay. Shallow soil gas contamination observed south of the Skateland building occurs in and above the 30 foot clay; however, there is not a clear migration pathway from the vicinity of MIP-3 to this area. Areas more distant from potential sources have a greater relative proportion of Freons, suggesting that vapor migration also plays a significant role in contaminant dispersal.

Soil Vapor Results Table 1 presents the analytical results for the soil vapor samples. Relatively high concentrations of TVOCs were found in soil vapor samples collected at VP-29 (22, 29, and 48 feet); VP-28 (20 feet); VP-21 (43 and 48 feet); and VP-24 (35 and 39 feet). Figures 4 to 9 show TVOC concentrations in soil vapor samples collected within 10 feet of MIP locations, superimposed on MIP sensor response graphs. In some cases (MIP-25, -27, and -30), the soil vapor results correlated very well with the MIP responses at all sample depths. At the other locations, the soil vapor TVOC concentrations correlated with the MIP responses only at some of the sample depths. However, it is not expected that the MIP responses would always correlate to the soil vapor TVOCs or soil TVOCs, since the MIP detectors respond to TVOCs in soil and soil vapor.

The distribution of six indicator parameters at four depth intervals is shown on Figures 10 through 33. Total VOCs, Total Freons, PCE, 1,1-DCE and 1,1,1-TCA, along with the total other VOCs (Total VOCs except for Freons and PCE) were selected to represent concentration distributions at the site, since these are the most wide-spread compounds with elevated concentrations. Figures 10 through 15 show concentrations of these indicators in the interval of 0 to 15 feet below ground surface (bgs). Figures 16 through 21 provide concentration

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distributions for the 15 to 30 foot depth interval. These shallow distributions represent the interval above the 30 foot clay layer. Figures 22 through 27 provide the same information for the interval 35 to 59 feet bgs, while Figures 28 through 33 present the distributions for depths greater than 60 feet. The relative percentage of PCE, Freons and other VOCs are shown for the four depth intervals on Figures 34 through 37.

The 0 to 15 foot and 15 to 30 foot intervals are likely to be impacted by releases from the surface, and areas where migrating perched liquids may have been present. The TVOCs show the highest concentrations in soil vapor in the area between the Star City Auto Body building and the Medlin building, and in the former loading dock area west of the Star City Auto Body building. TVOC concentrations in these shallow intervals persist in the northwest, west and southwesterly directions, which is consistent with the slope of the 30 foot clay layer. The character of the soil vapor is similar near the Star City Auto building and west onto the Terra Pave property, with PCE present in the soil vapor. More distant samples to the northwest and south show a lower percentage of PCE in the vadose zone. The highest concentration for Freons occur in the samples located between the Star City building and the Medlin building. Elevated PCE concentrations are present both between the buildings and in the loading dock area, suggesting that releases of both of these compounds occurred. The highest 1,1,1-TCA concentrations occur near the loading dock, but do not appear to migrate significantly, likely due to degradation of this compound. Samples from the interval below the 30 foot clay and the water table (35 to 59 and >60 foot intervals) show a generally similar pattern in concentration characteristics, with PCE in areas west and southwest of the Omega site. Soil vapor TVOC concentrations persist for a greater distance in this deeper zone.

Soil Results Soil borings were installed and sampled adjacent to MIP-8, MIP-14, MIP-21, MIP-22 and MIP-26. Table 2 presents the analytical results for the soil samples. Attachment B contains the physical properties data for the soil samples. Figures 38 to 42 show TVOC concentrations in soils sampled next to MIP locations plotted on MIP sensor response graphs. Overall, there is good correlation between the soil TVOCs and the adjacent MIP responses; however, there are a few data points that do not correlate well to the MIP responses (see "outlying" data points on Figures 40 and 42). Collectively with similar figures for both soil and soil vapor presented in the November 1, 2005 and January 24, 2006 memoranda, Figures 4 to 9 and 38 to 42 indicate that the MIP is appropriate as a screening tool to provide continuous lithologic and qualitative VOC contamination information over the entire vertical profile probed. The soil sampling locations during the March, 2006 sampling campaign were located off of the former Omega property in a downgradient direction. These samples typically showed higher concentrations in areas below the 30 foot clay zone, suggesting that these boring are not located in areas of surface releases.

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4.0 Medlin & Son

This section presents information pertaining to the Medlin & Sons property (12484 Whittier Boulevard) which is immediately adjacent to the north northwest of the site.

4.1 Below-Grade Room

A Phase 1 environmental assessment for the Medlin & Sons property (12484 Whittier Boulevard) conducted in 1997 (CENTEC Engineering, 1997) reported the following:

A below-grade "room" is reportedly located along the southern side of the building. A document at the City Building Department dated June 26, 1969, states "The test tunnel designed under the floor of the new building is to be used for non-hazardous test work on government contracts. The exact nature of which is restricted information." Access to the tunnel was blocked by the extremely weighty metal door set into the asphalt at the rear and the large amount of water in the vault of the front entrance."

During the November 2004 soil vapor sampling event, CDM observed the "tunnel" through a vault opening adjacent to the south side of the building. The below-grade room appeared to be quite large and contained approximately 3 feet of standing water on the floor. Since it is unlikely the foundation was constructed to be water-tight, there may be a leaking water supply line that floods the space. If in turn the foundation leaks, the infiltrating water may have a significant impact on subsurface contaminant migration beneath and adjacent to the building, particularly if that water is contaminated. We recommend that EPA sample the water in this structure to determine if it is contaminated.

4.2 Potential Source Area

While an in-depth evaluation of all soil, soil vapor and MIP data will be performed during preparation of the RI report, preliminary assessment of the results indicates the Medlin & Son property may be an additional source area. Information that supports this preliminary conclusion includes:

- Cal Air Conditioning operated at the property from 1976 to 1996 and a Phase 1 environmental assessment (Centec Engineering, 1997) found "...an area of some significant surficial staining on the wall and floor of the extreme northwestern portion of the warehouse." Freons are commonly used in air conditioners. CalAir was acquired by Johnson Controls in 2004, and is now located at 12393 Slauson Avenue, Santa Fe Springs (562/698-8301).
- In December 2005, in an attempt to bore MIP-17 adjacent to the southern wall of the Medlin building, very high VOC concentrations were encountered in vapors

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emanating from shallow soils. To prevent having to use Level C protection for the samplers, the MIP-17 boring was off set a few feet and the high VOC concentrations were not encountered at the new location. The ECD response at new MIP-17 location indicated VOC contamination from about 1 foot below ground surface (bgs) to the total depth of the boring (70 feet bgs)

- Freon 113, Freon 11, 1,1-DCE, PCE and other VOCs were detected in vapor samples from 6, 12, 18, 24, 40, 50, 60, and 70 feet bgs collected at VP-1, VP-2 , VP-3 and VP-4 which are located along northwester boundary of the site and adjacent to the Medlin building.
- MIP-1 (located along northwestern boundary of the site and adjacent to the Medlin building) ECD responses indicate contamination from the surface to the total depth of the boring (80 feet).
- Freon 113, Freon 11, 1,1-DCE, PCE and TCE were detected in vapor samples from 8, 22, 32, 47, and 60 feet bgs collected at VP-16 which is located at the northwestern corner of the Medlin building.
- Freon 113, Freon 11, 1,1-DCE, PCE and other VOCs were detected in vapor samples from 21.5, 29, and 51 feet bgs collected at VP-20 which is located along the western wall of the Medlin building.

5.0 Conclusions and Recommendations

Upon integrating the third round of MIP/VP data into the overall MIP/VP data set, the following conclusions are presented:

- The 30 foot clay has been encountered at all locations where MIP probes have been installed. It appears that the sandy units overlying the 30-foot clay layer acts as a migration pathway for shallow vapors from the source area. The presence of the 30 foot clay unit limits the vertical migration of soil vapor from the deep vadose zone and groundwater due to its low permeability;
- Soil vapor concentrations in the interval above the 30 foot clay show decreasing total VOC concentrations with distance in the north, south and west directions, meeting the criteria identified in the work plan;

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- Elevated soil vapor concentrations in the deep vadose zone are due, at least in part, to volatilization from groundwater, which is being addressed in the ongoing EE/CA. For these reasons, no further investigation of soil vapor in the deep vadose zone is necessary.
- Potential source areas have been identified as the area between the former Omega Building and the Medlin Building and in the former loading dock area west of the Star City Auto Body building.

Based on the above conclusions, only the two locations previously proposed for soil vapor sampling along Whittier Boulevard (VP-26 and VP-27) are recommended to meet the Work Plan objectives. The proposed soil vapor samples to the east will allow a determination if the work plan criteria are met in this direction.

In addition, it is recommended that EPA sample the water in the flooded below-grade "room" of the Medlin building to determine if it is a source of subsurface contamination.

6.0 References

CENTEC Engineering, 1997. Phase I Environmental Assessment - 12484 Whittier Boulevard, Whittier California 90602. August 5.

FIGURES

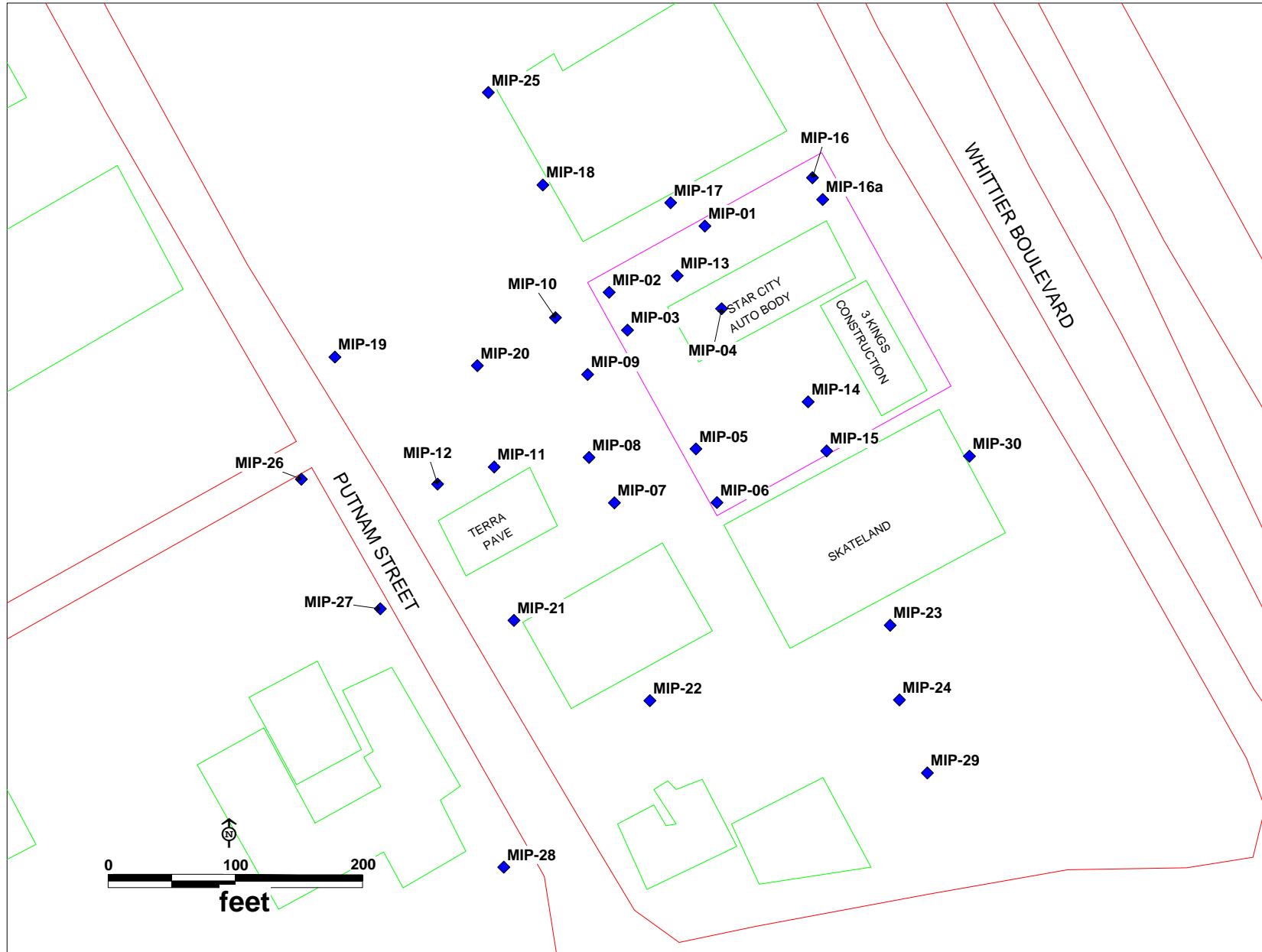


Figure 1 Location of MIP Borings

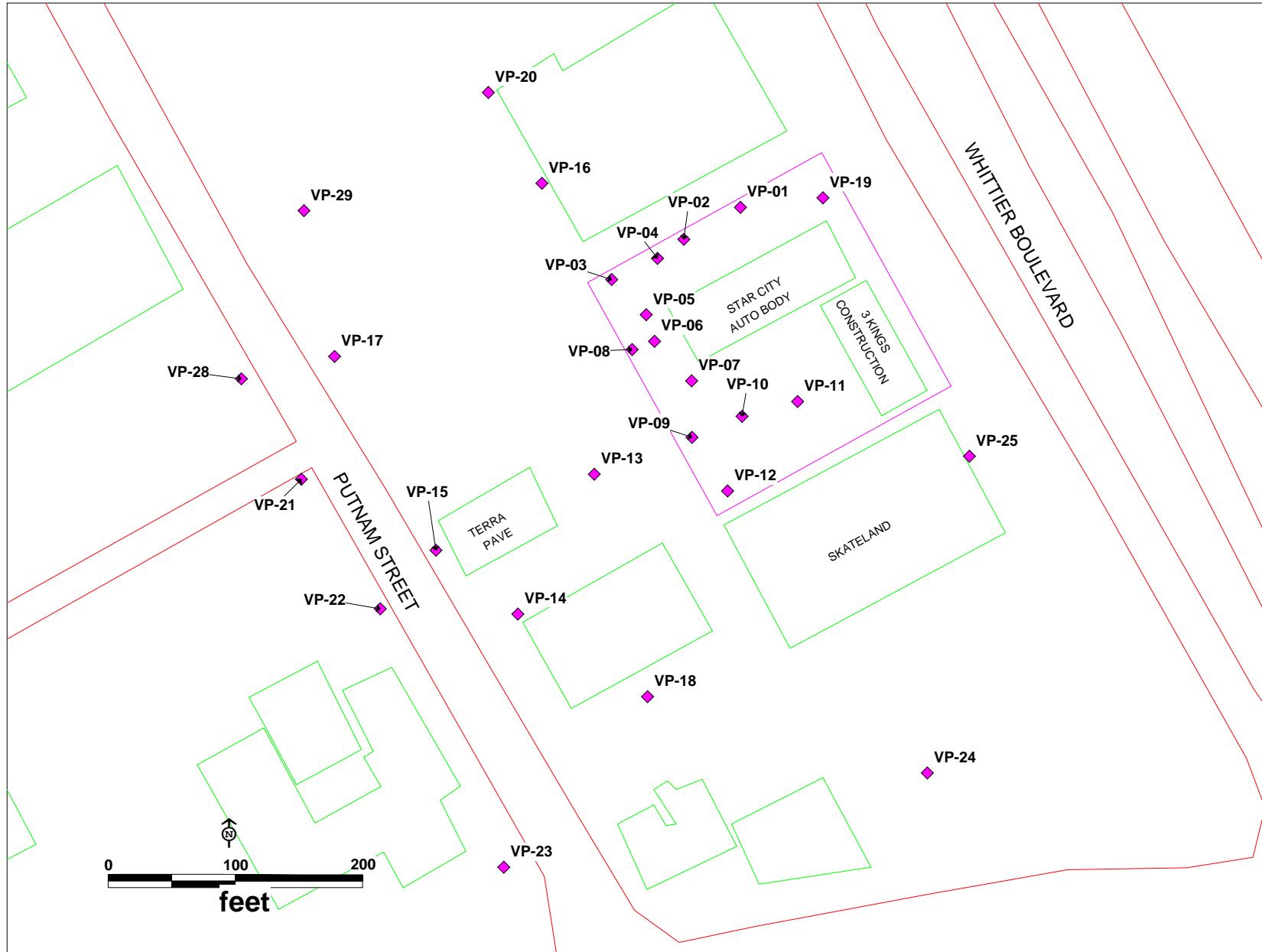


Figure 2 Location of Vapor Sampling Probes

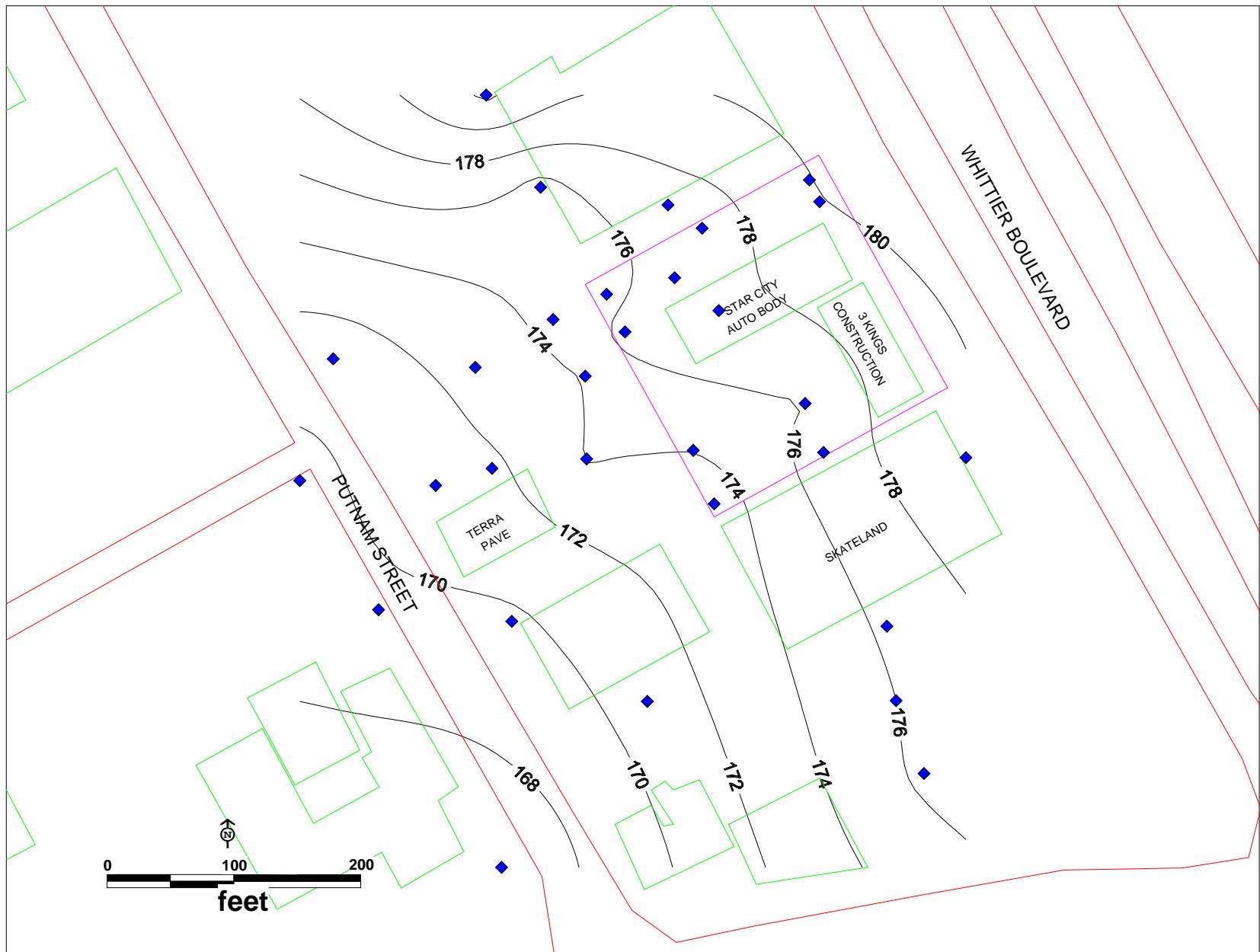


Figure 3 Elevation Top of “30 Foot Clay”

Figure 4. MIP-25 ECD and TVOCs in Adjacent Soil Vapor

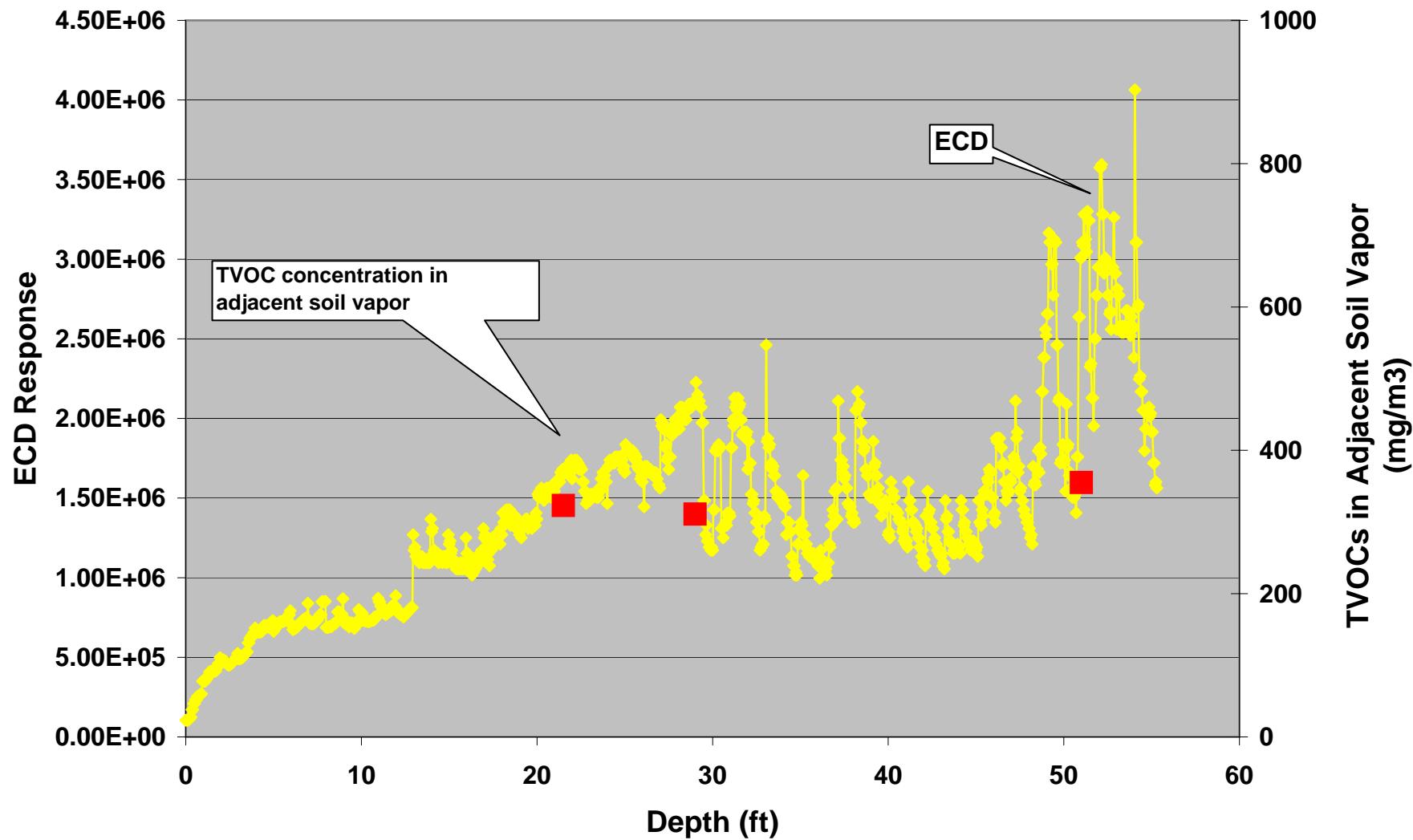


Figure 5. MIP-26 PID and TVOCs in Adjacent Soil Vapor

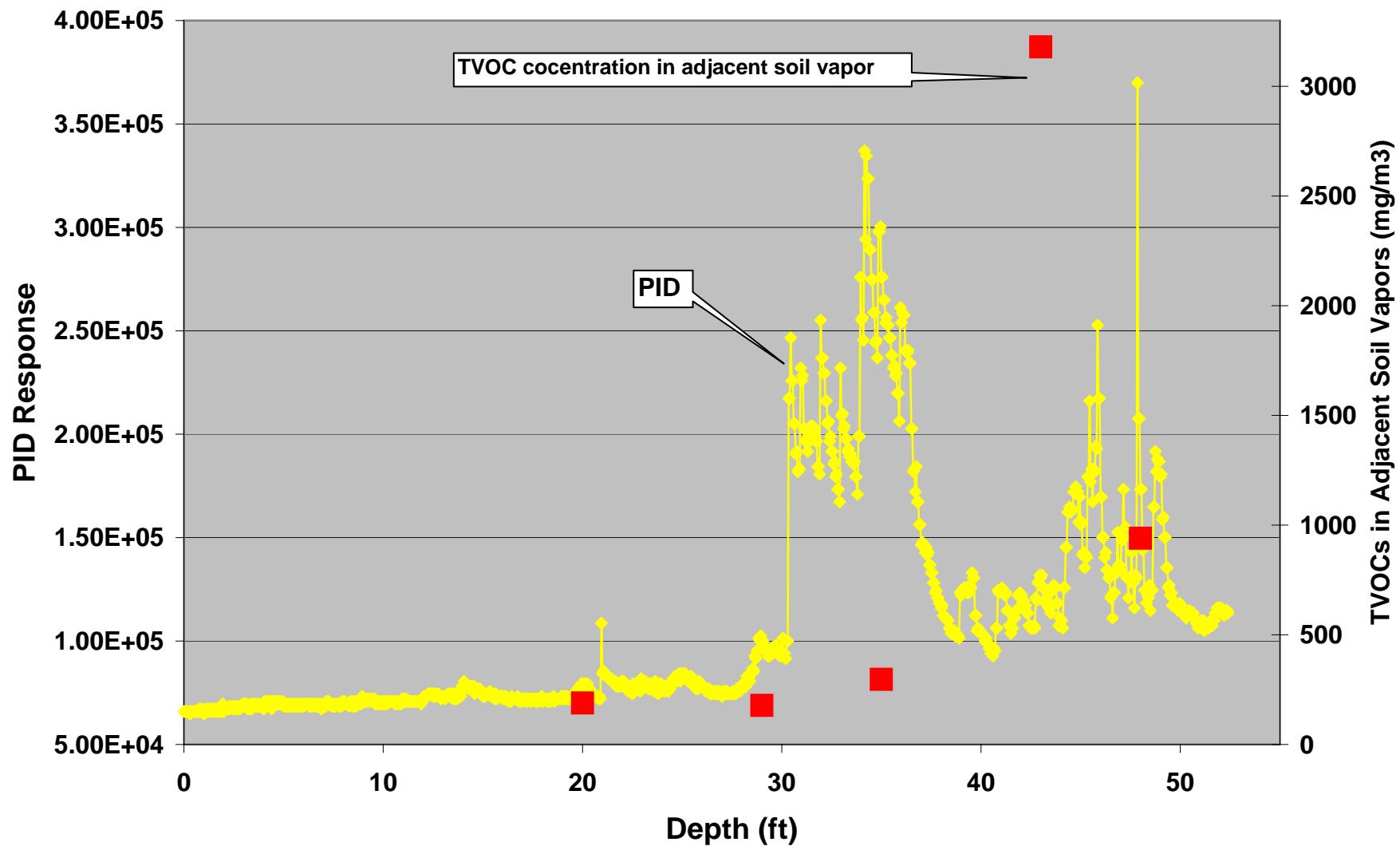


Figure 6. MIP-27 ECD and TVOCs in Adjacent Soil Vapor

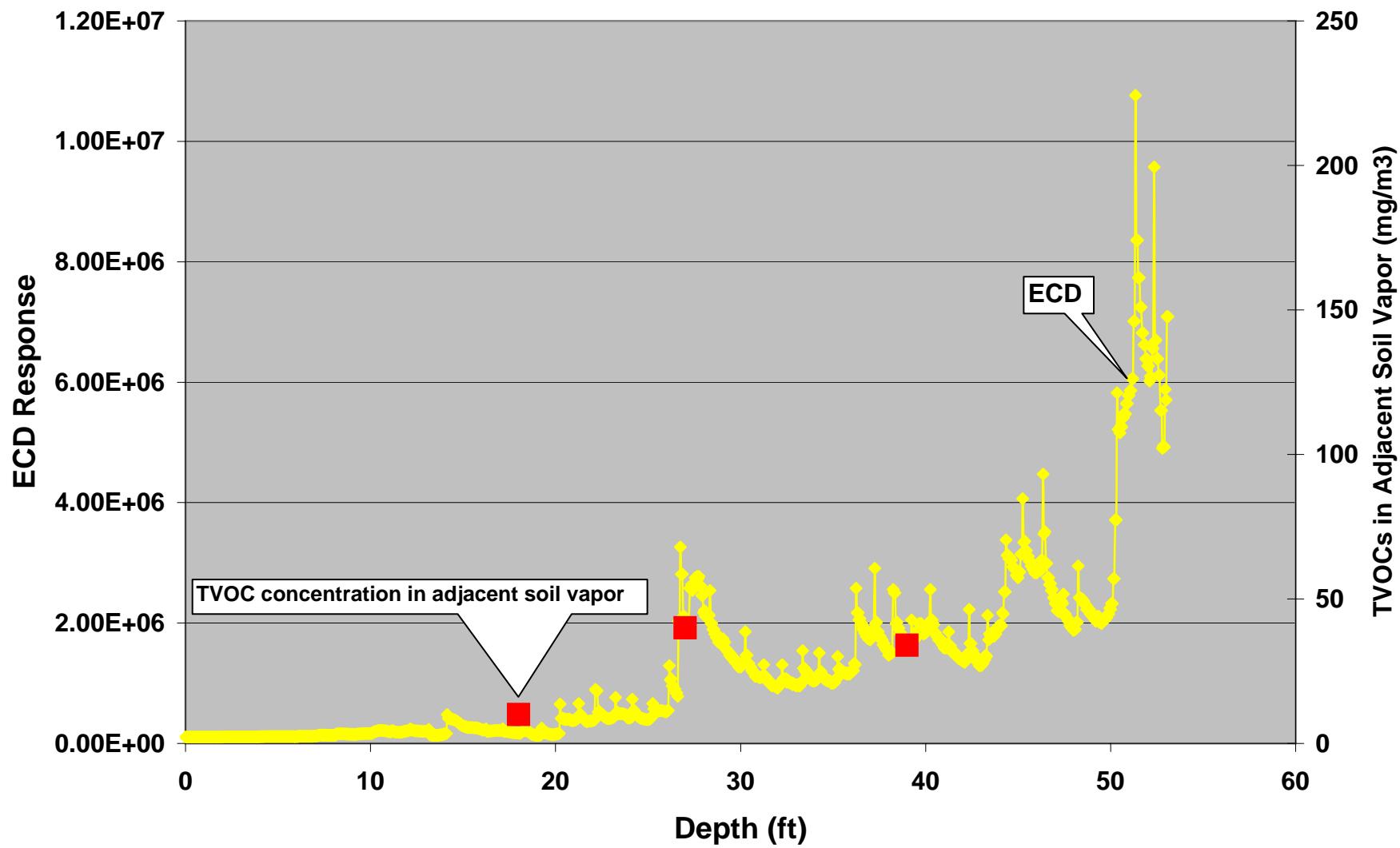


Figure 7. MIP-28 ECD and TVOCs in Adjacent Soil Vapor

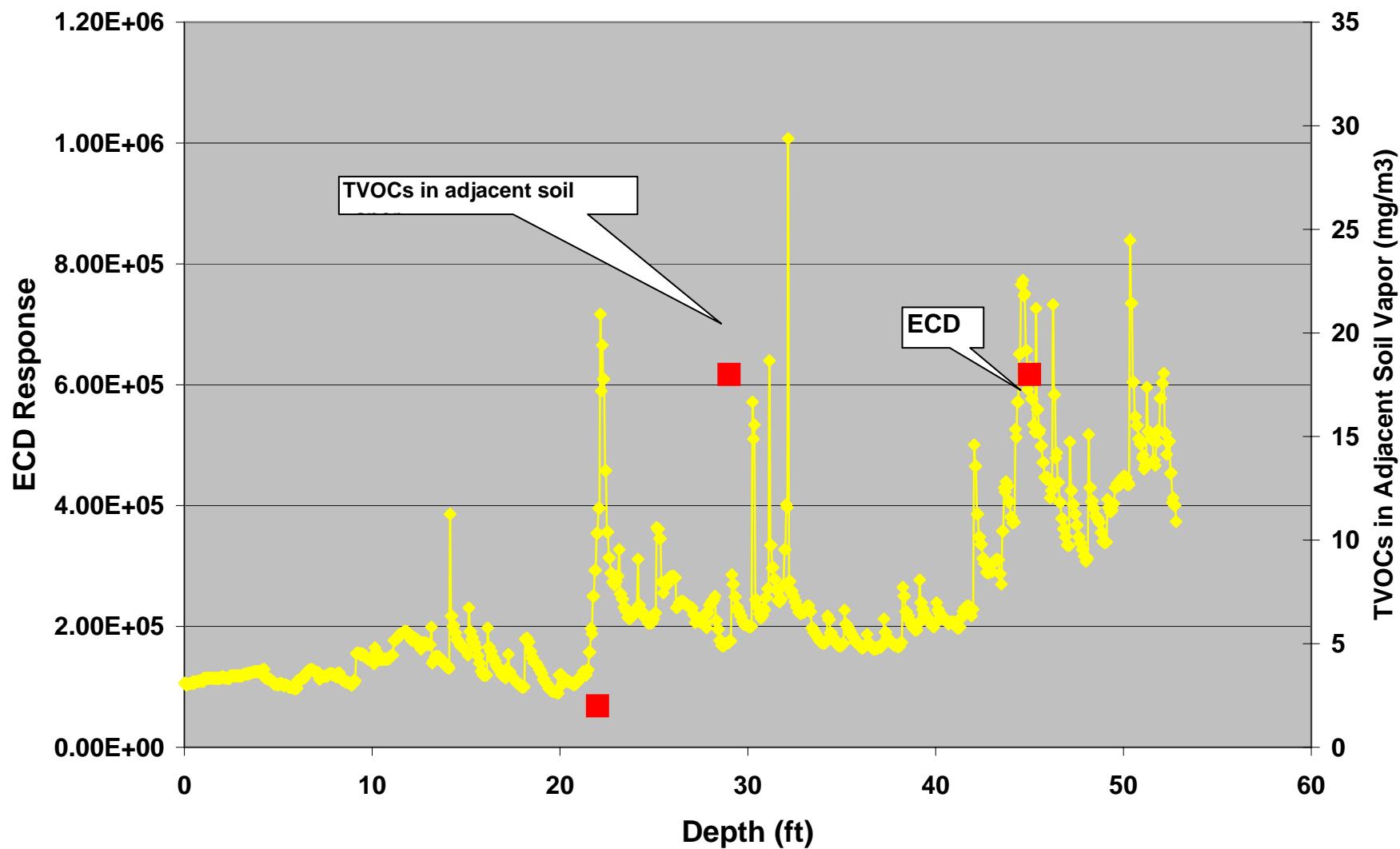


Figure 8. MIP-29 ECD and TVOCs in Adjacent Soil Vapor

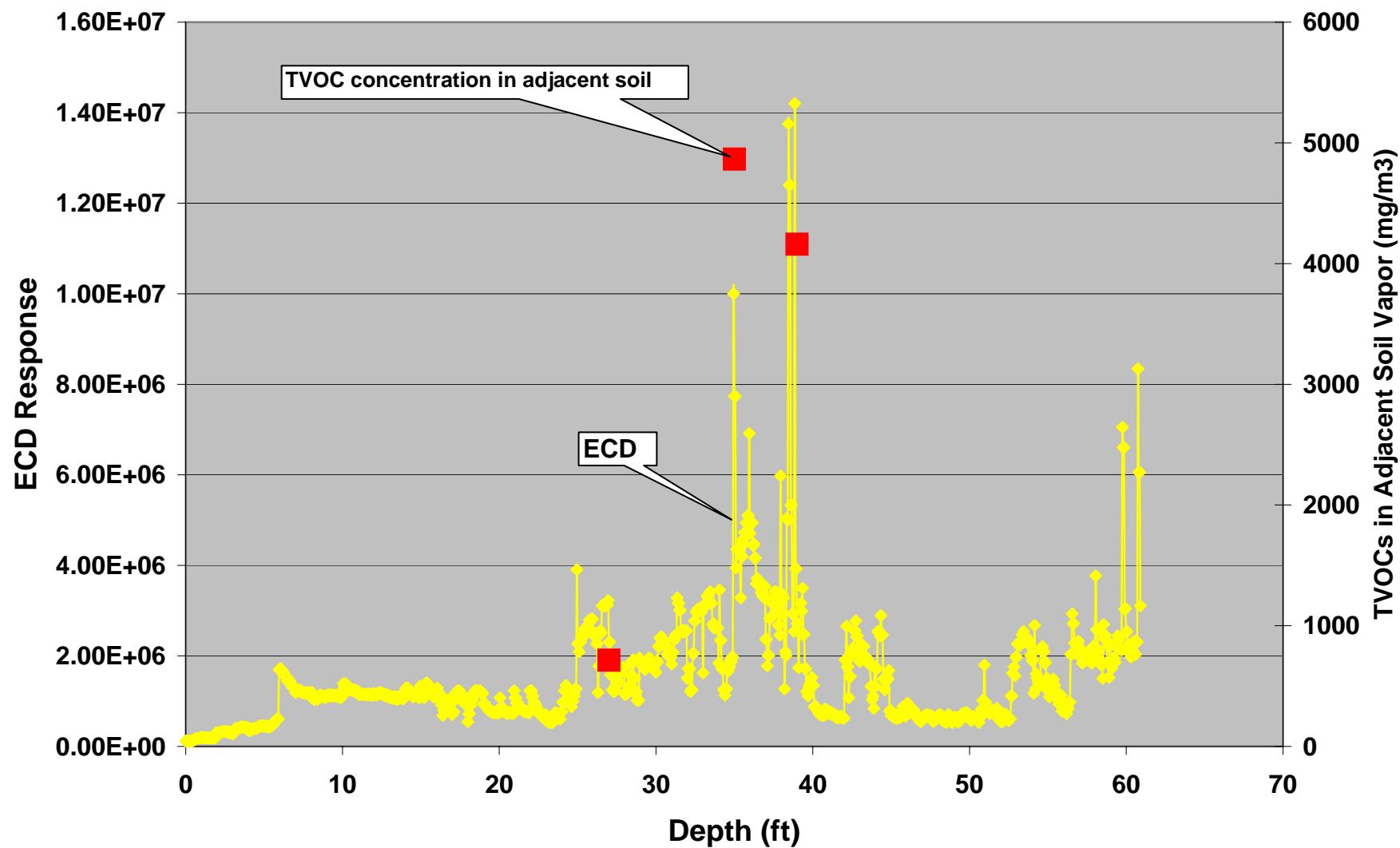
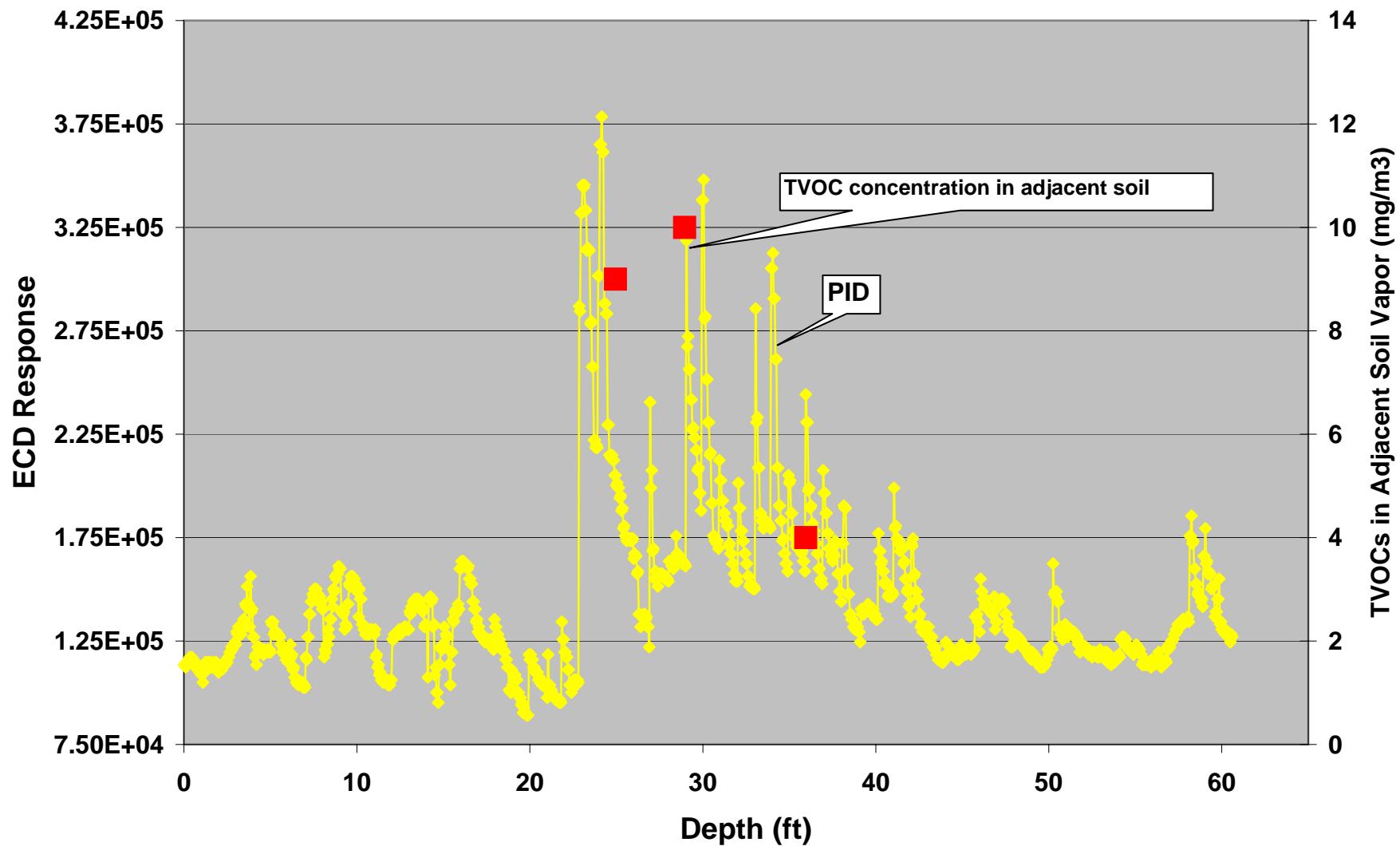


Figure 9. MIP-30 ECD and TVOCs in Adjacent Soil Vapor



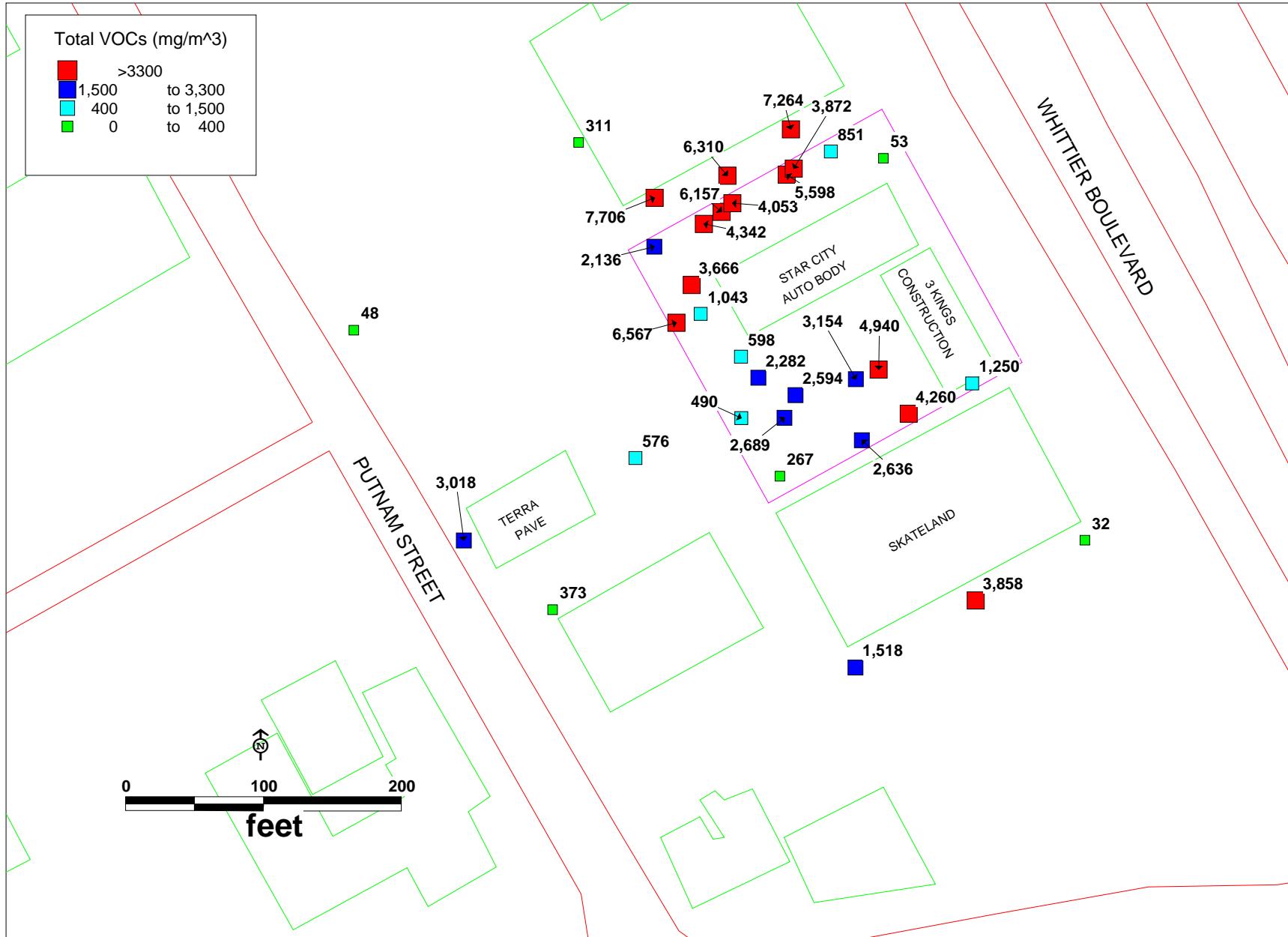


Figure 10 Total VOCs 0 – 15 Feet

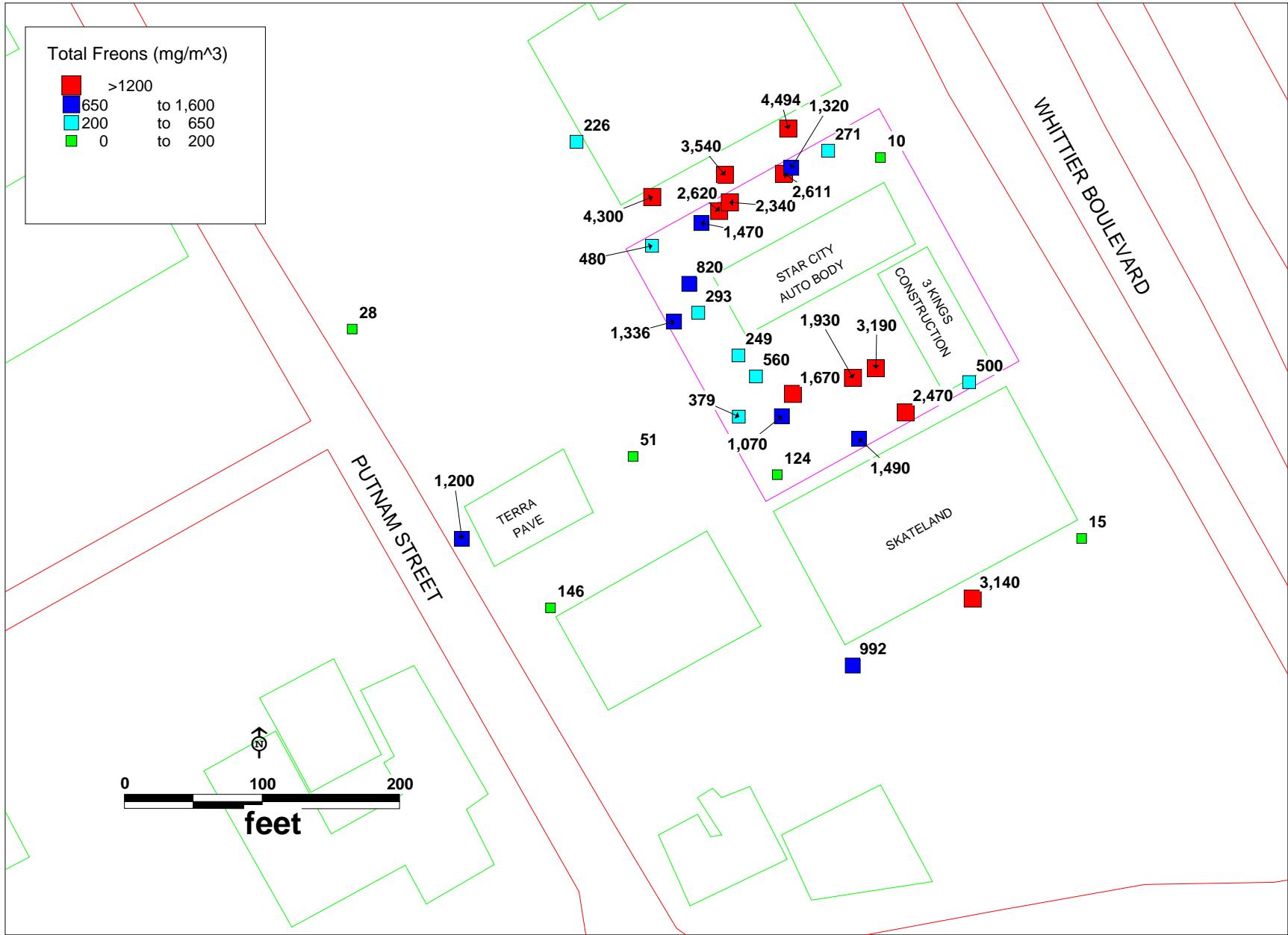


Figure 11 Total Freons 0 – 15 Feet

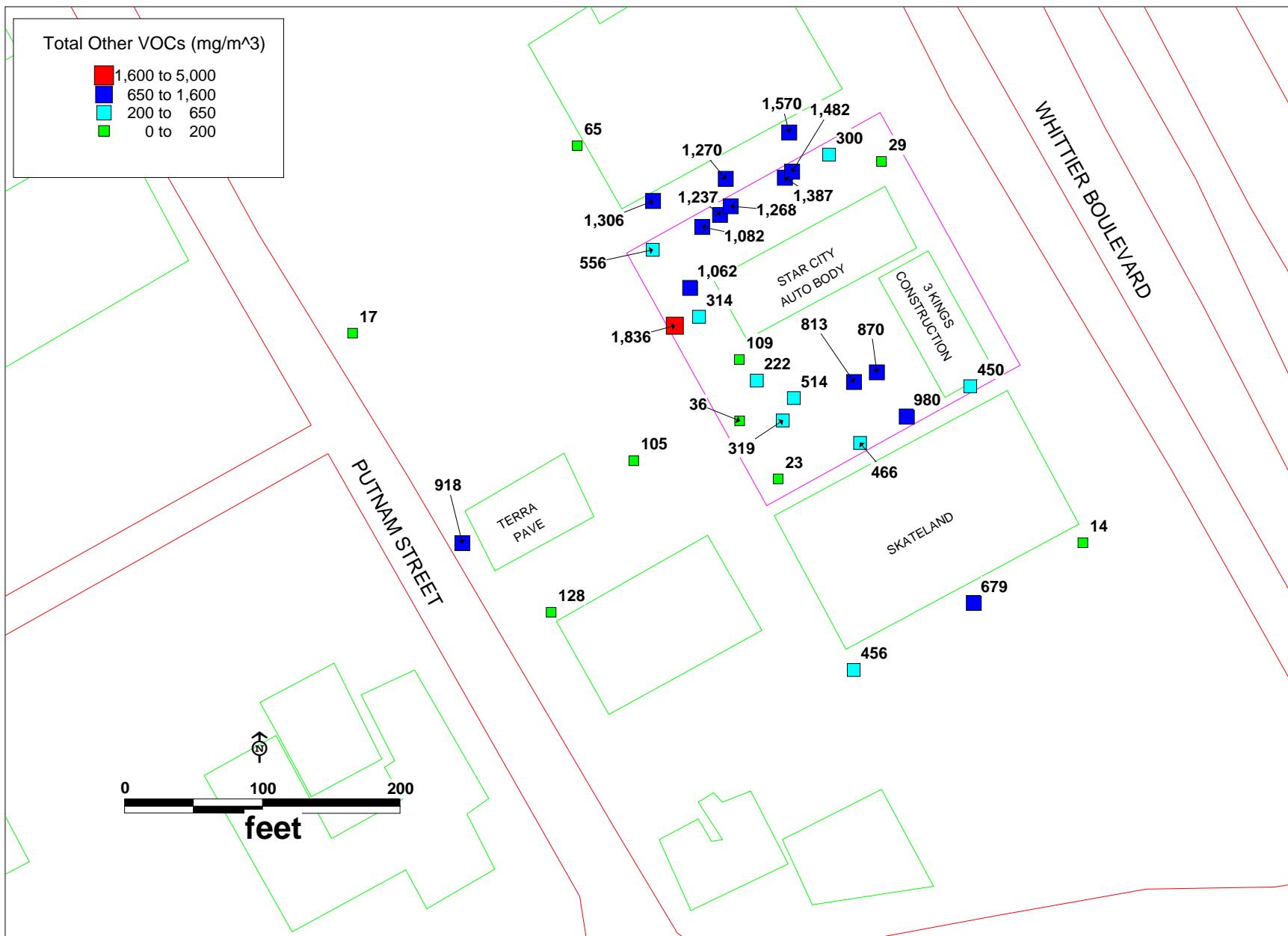


Figure 12 Total Other VOCs (TVOC-PCE-Total Freons) 0 – 15 Feet

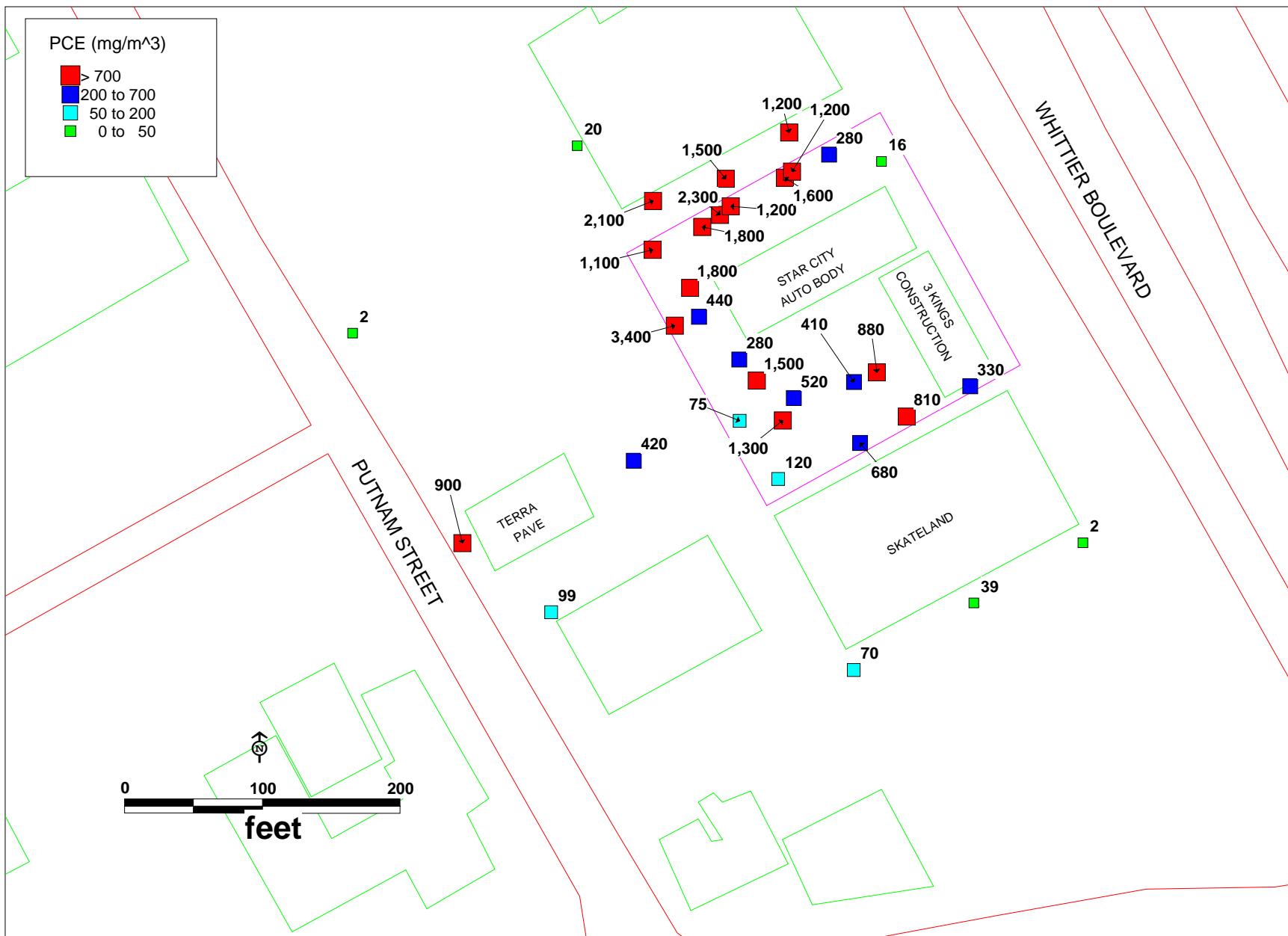


Figure 13 PCE 0 – 15 Feet

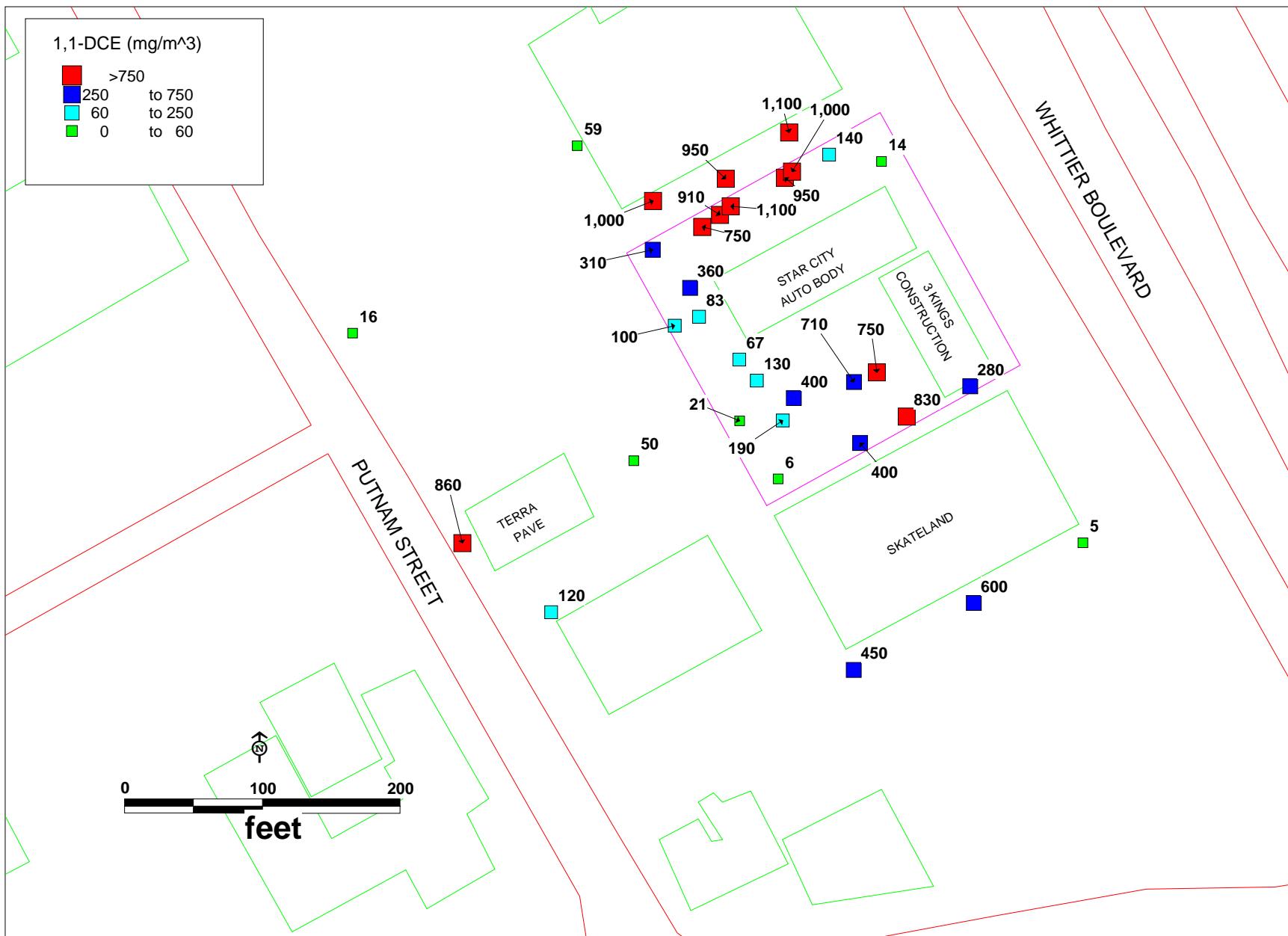


Figure 14 1,1-DCE 0 – 15 Feet

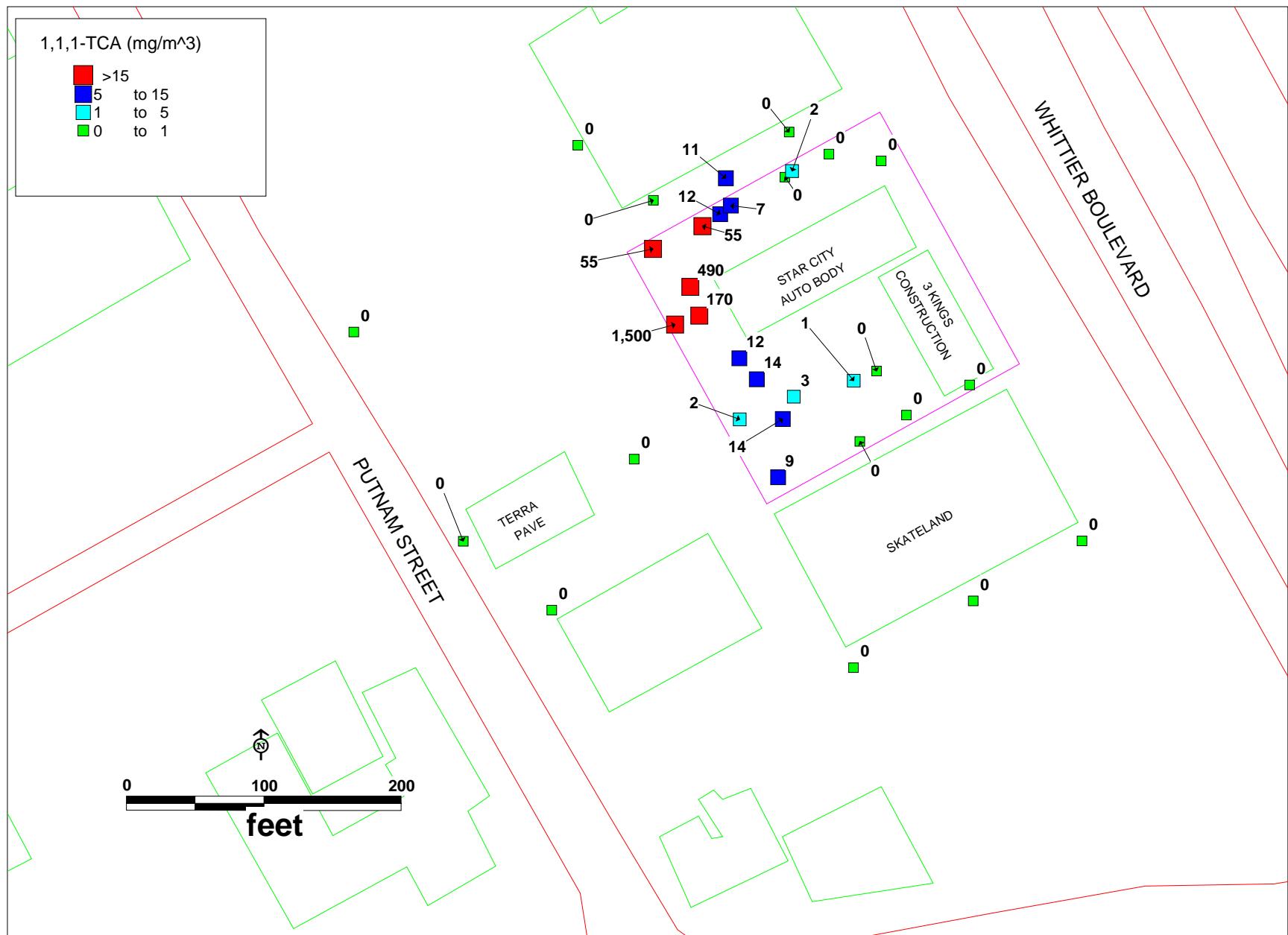


Figure 15 1,1,1-TCA 0 – 15 Feet

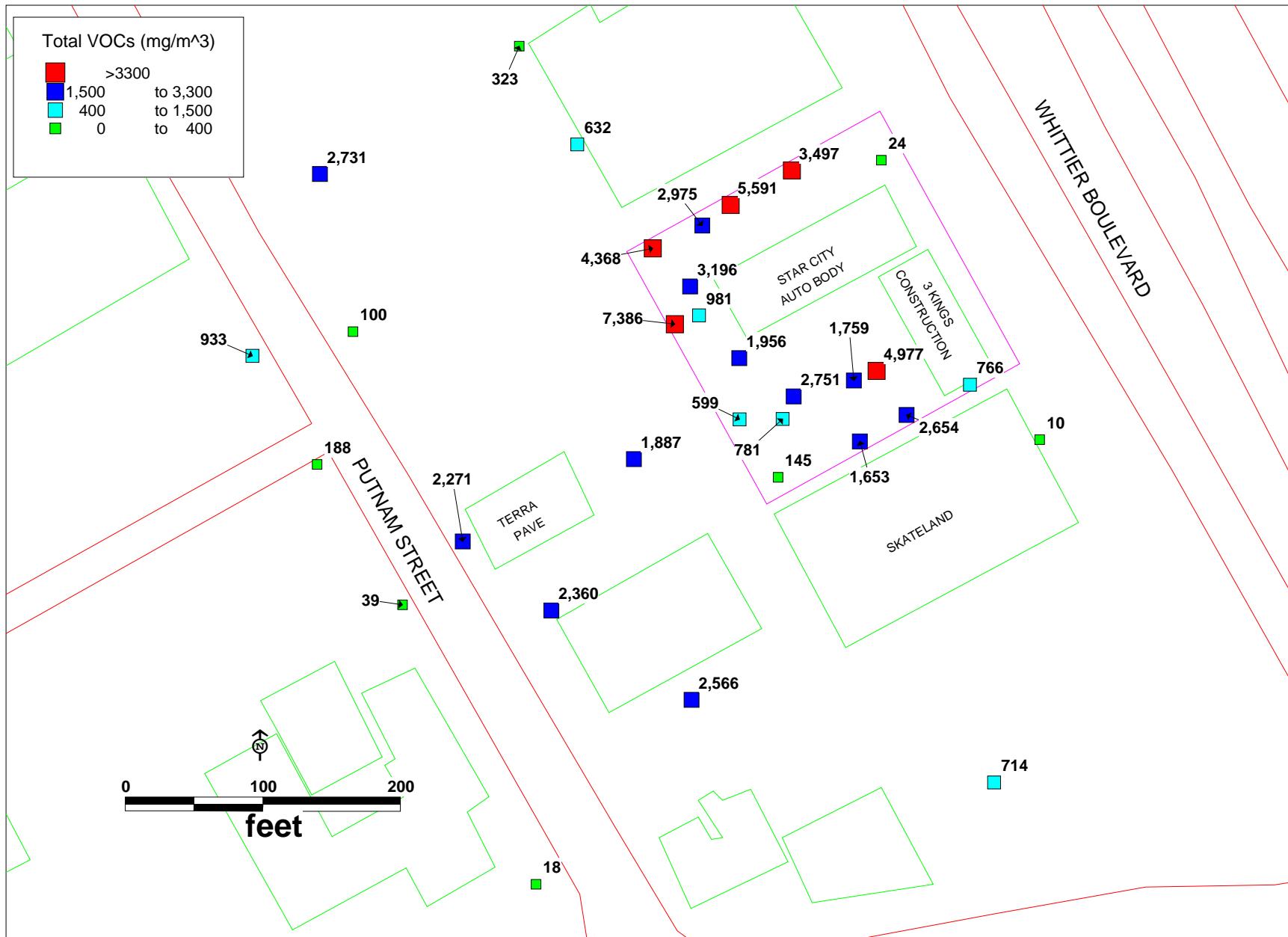


Figure 16 Total VOCs 15 - 30 Feet

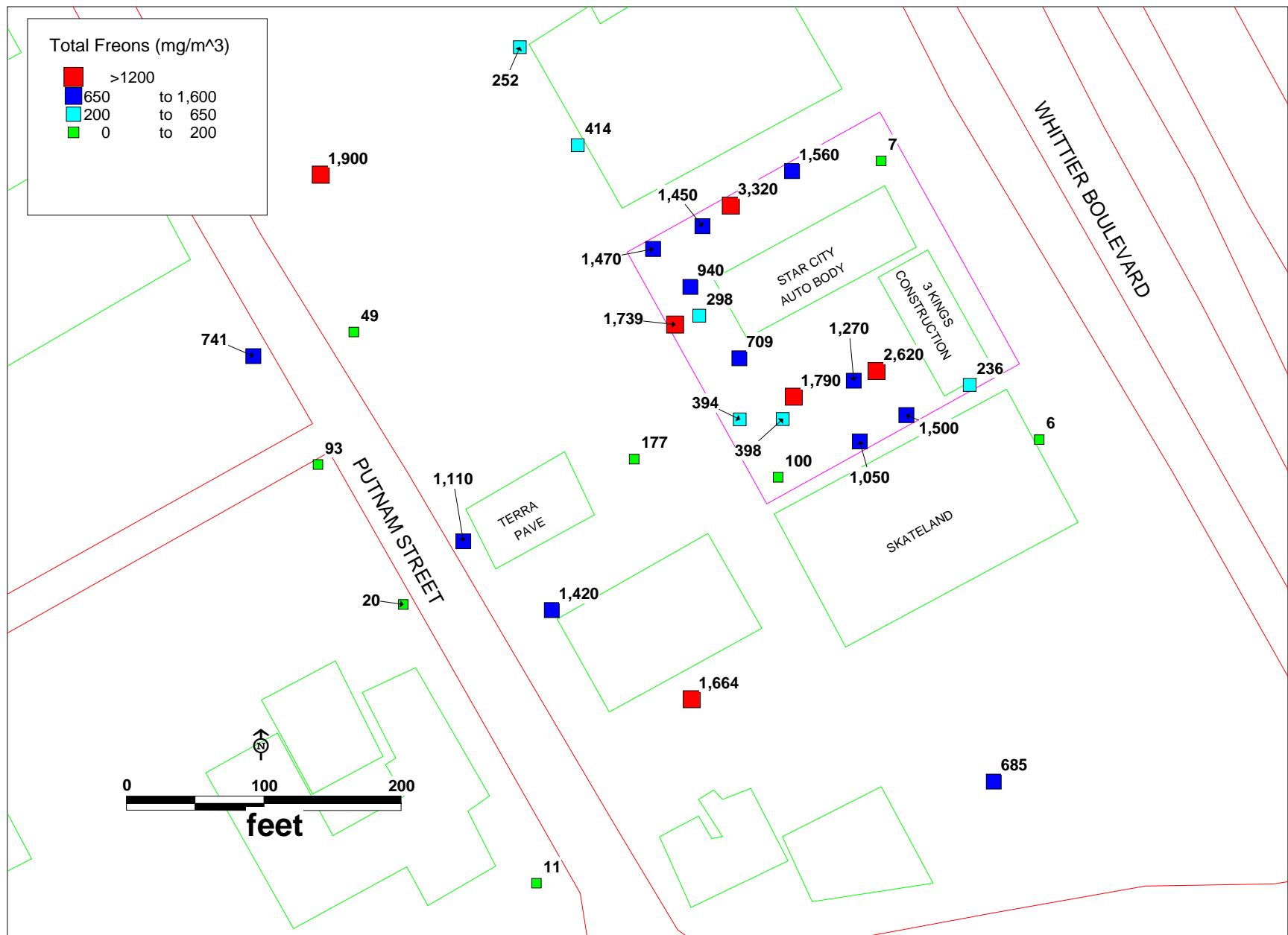


Figure 17 Total Freons 15 - 30 Feet

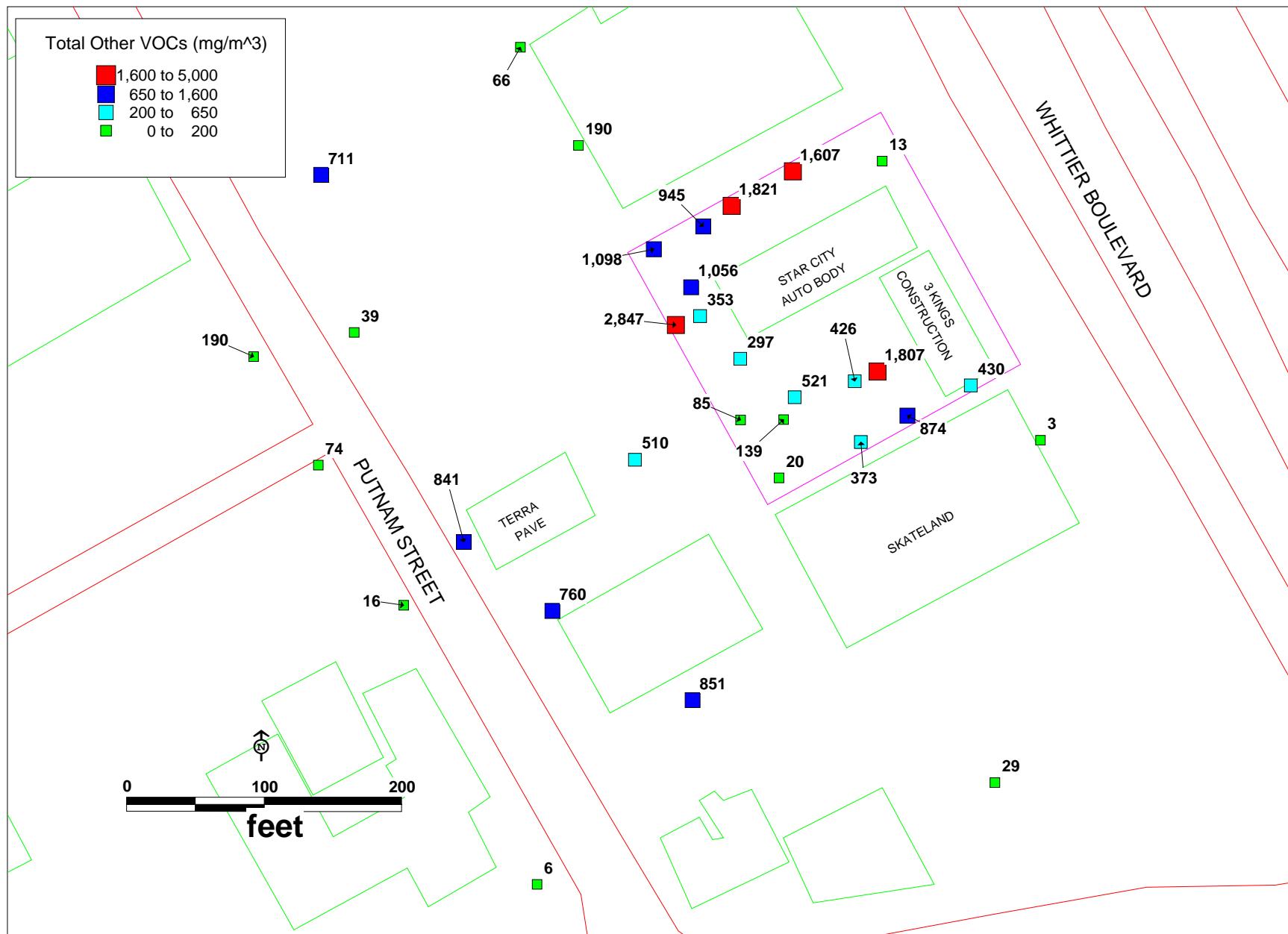


Figure 18 Total Other VOCs (TVOC-PCE-Total Freons) 15 - 30 Feet

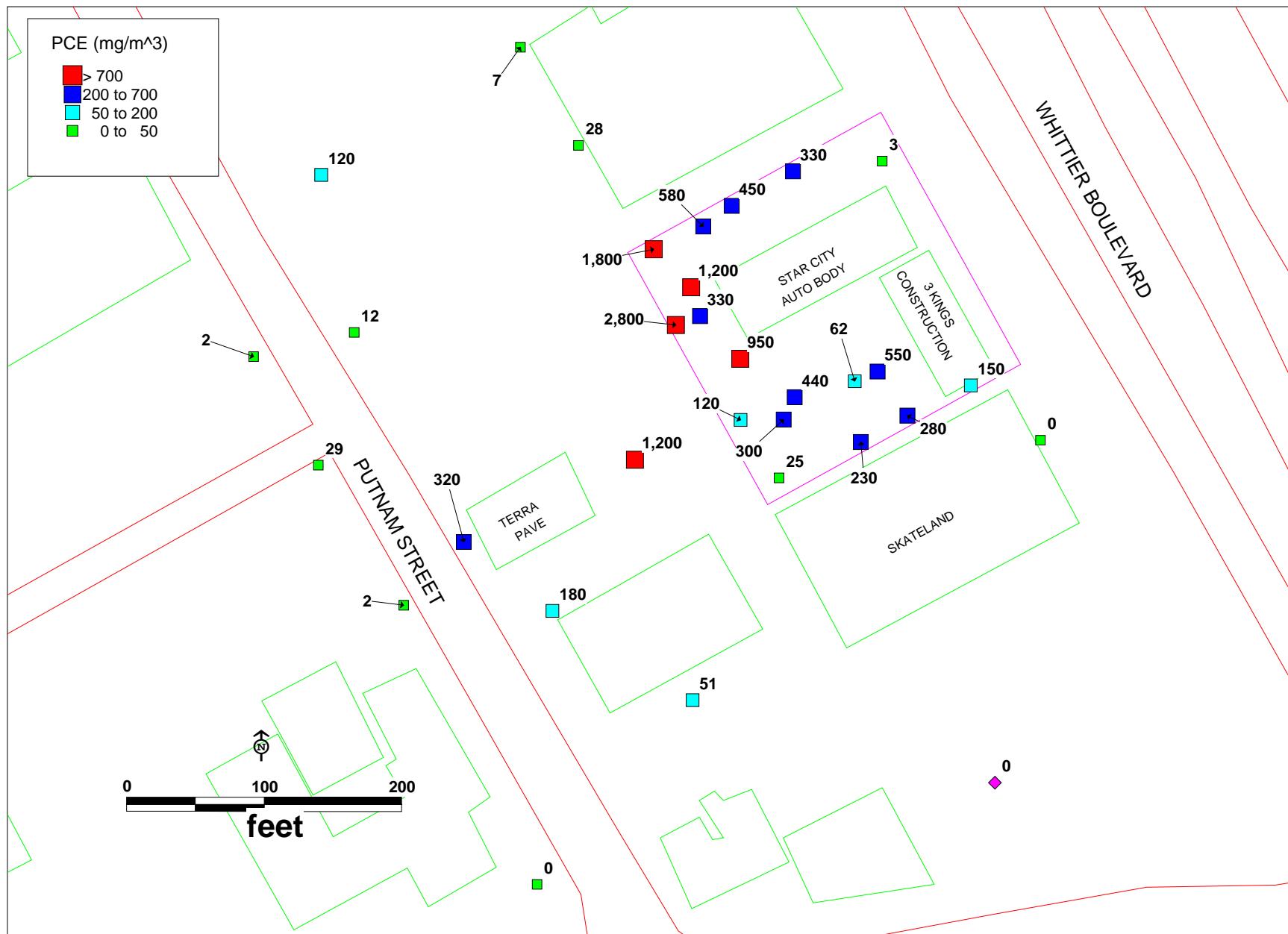


Figure 19 PCE 15 - 30 Feet

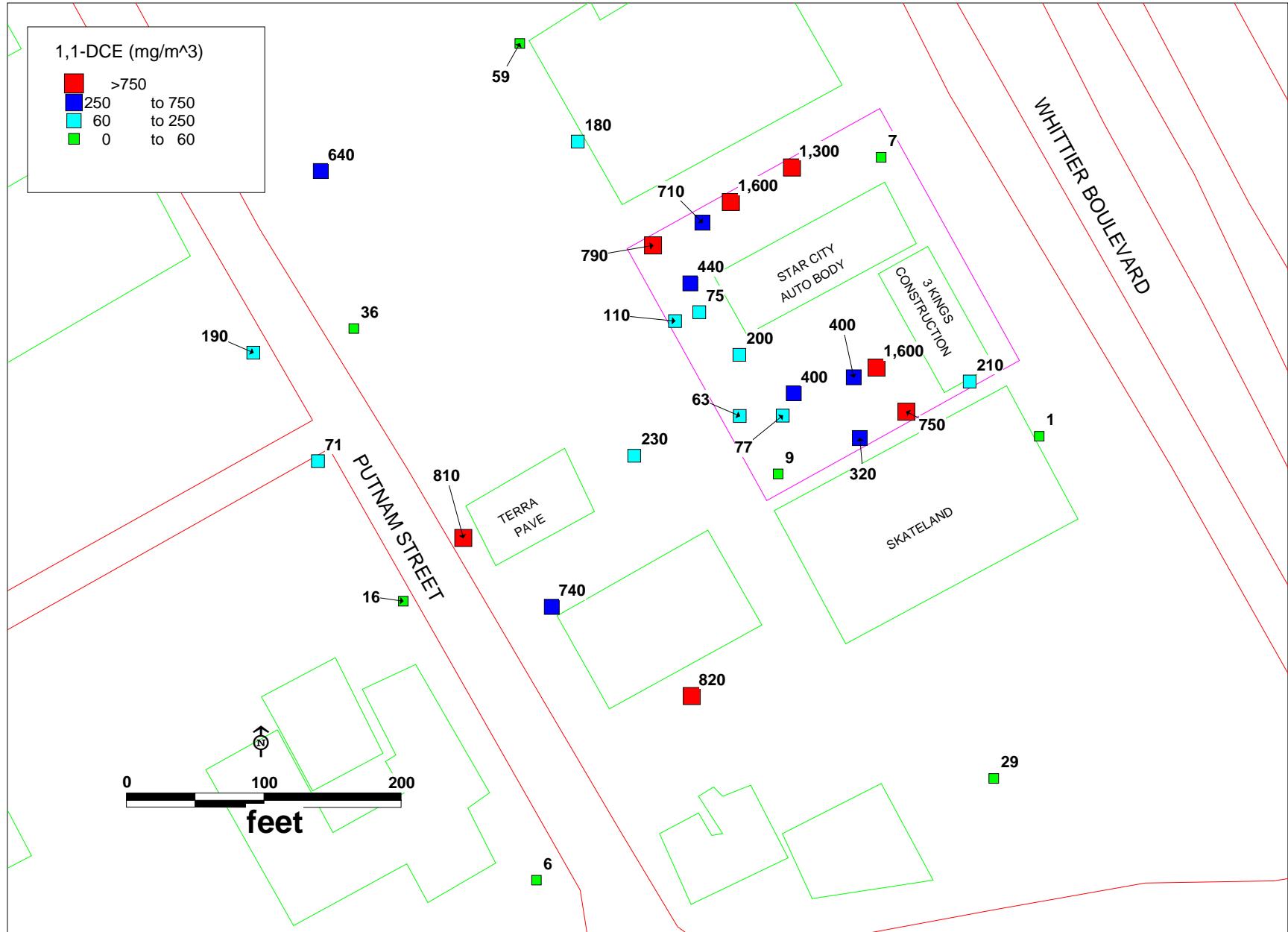


Figure 20 1,1-DCE 15 - 30 Feet

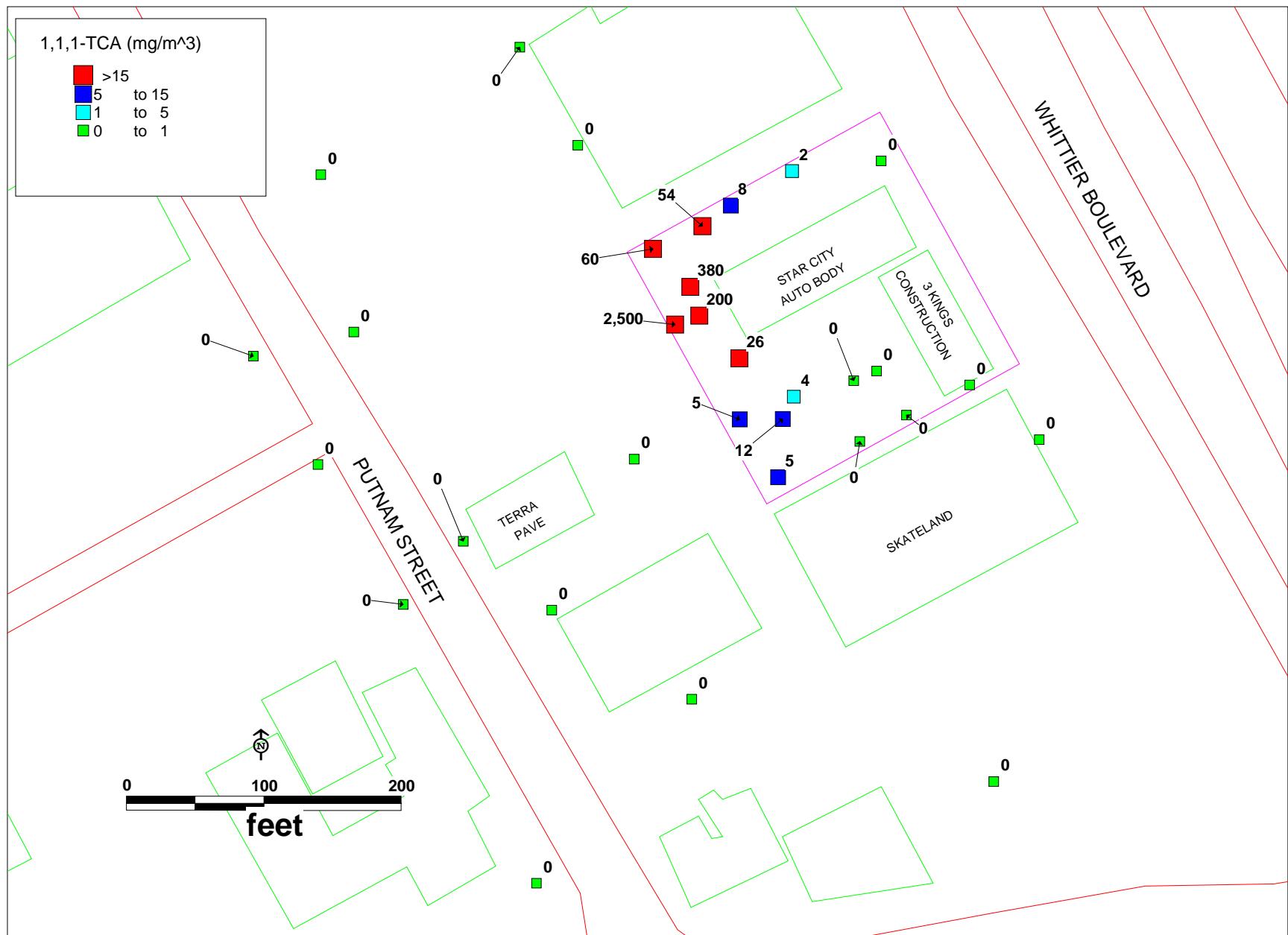


Figure 21 1,1,1-TCA 15 - 30 Feet

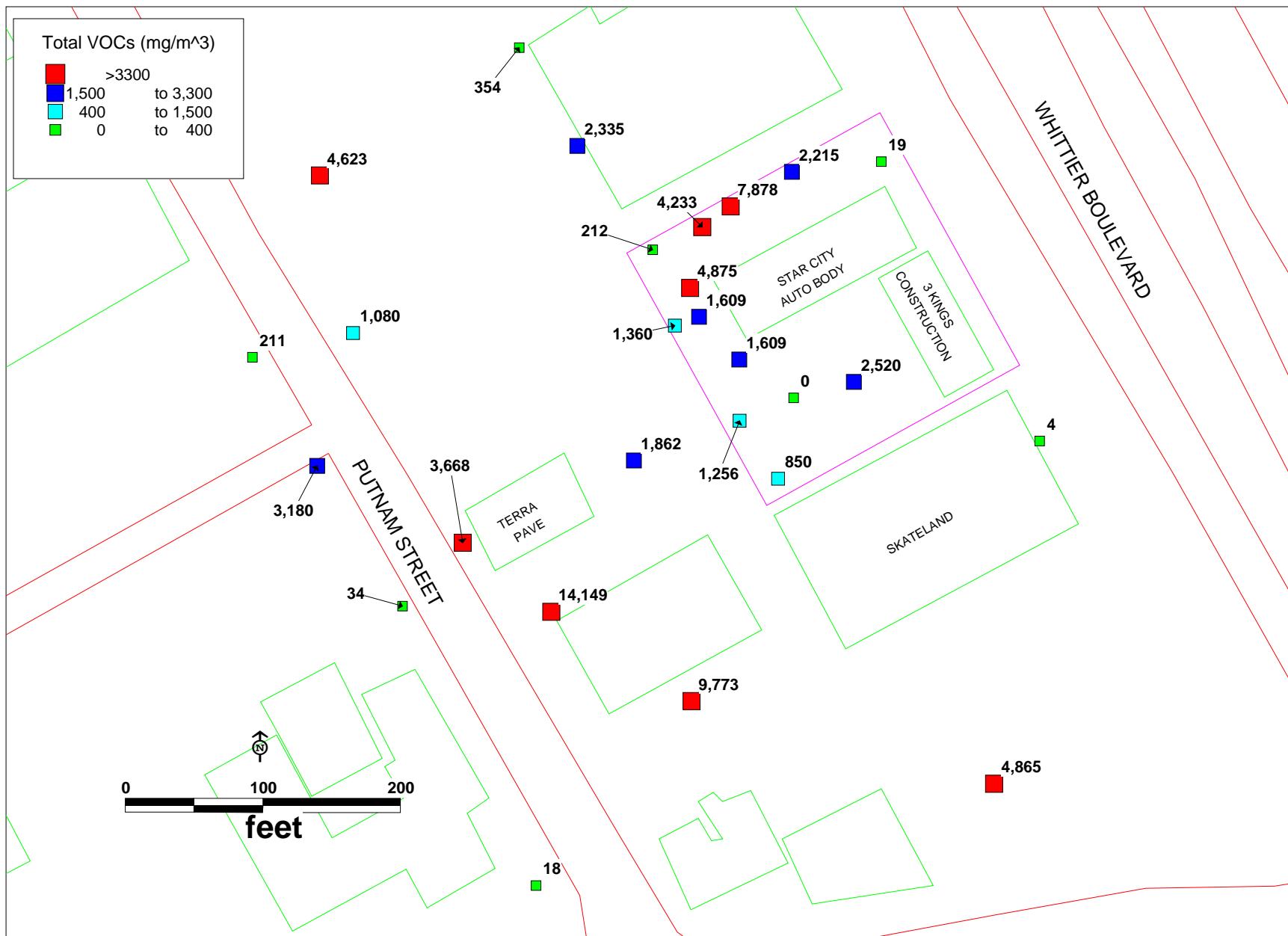


Figure 22 Total VOCs 35 - 59 Feet

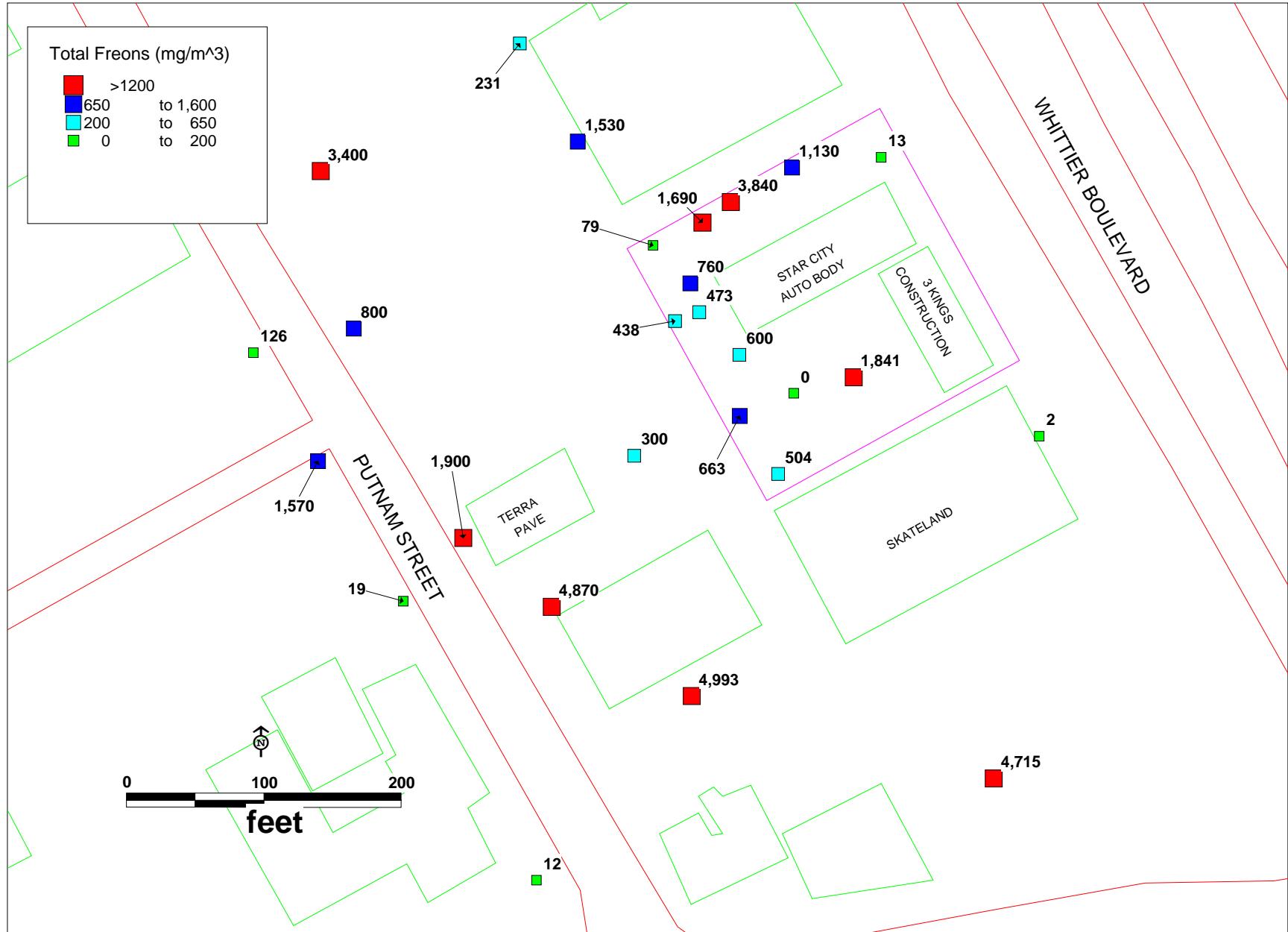


Figure 23 Total Freons 35 - 59 Feet

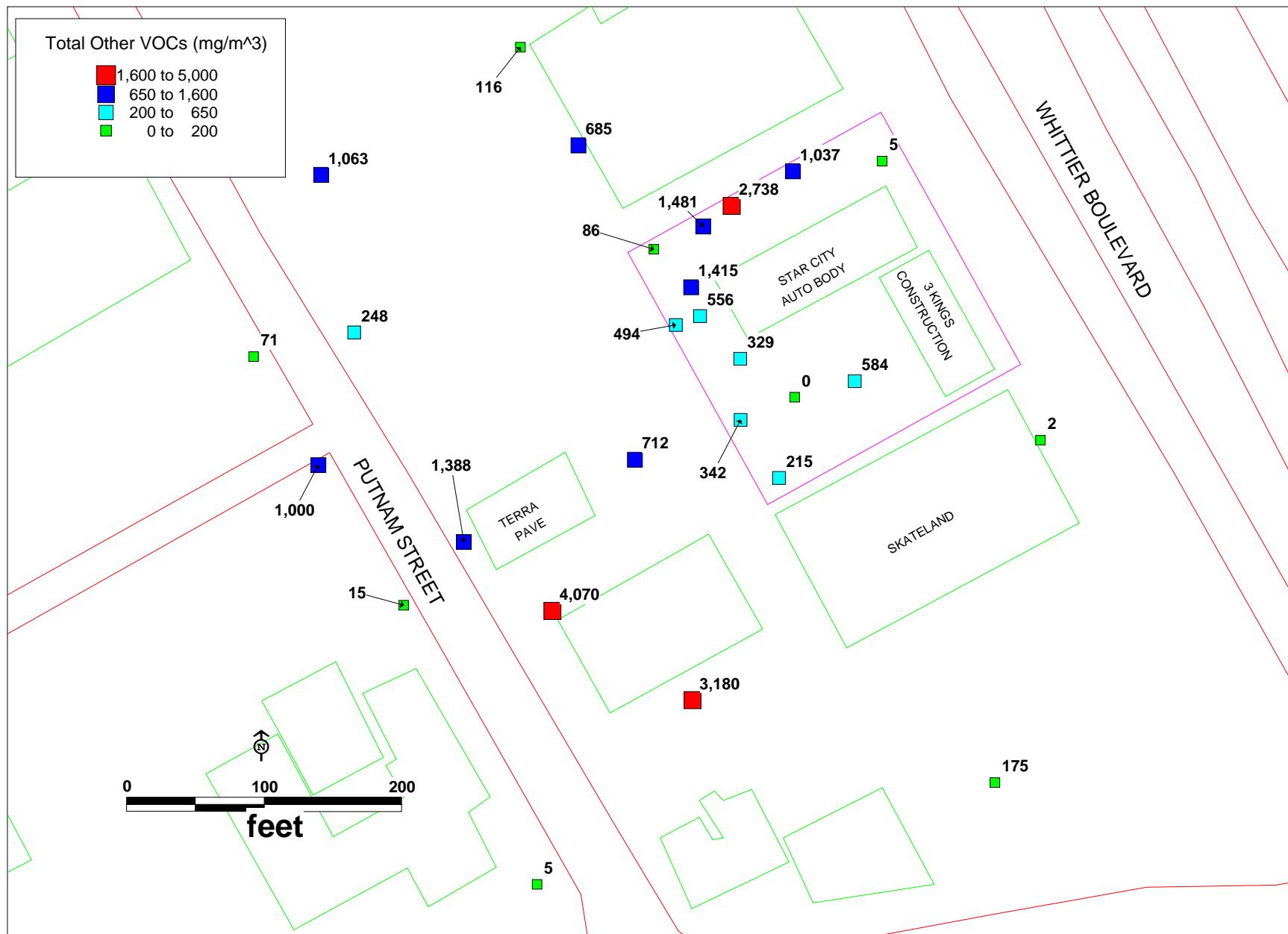


Figure 24 Total Other VOCs (TVOC-PCE-Total Freons) 35 - 59 Feet

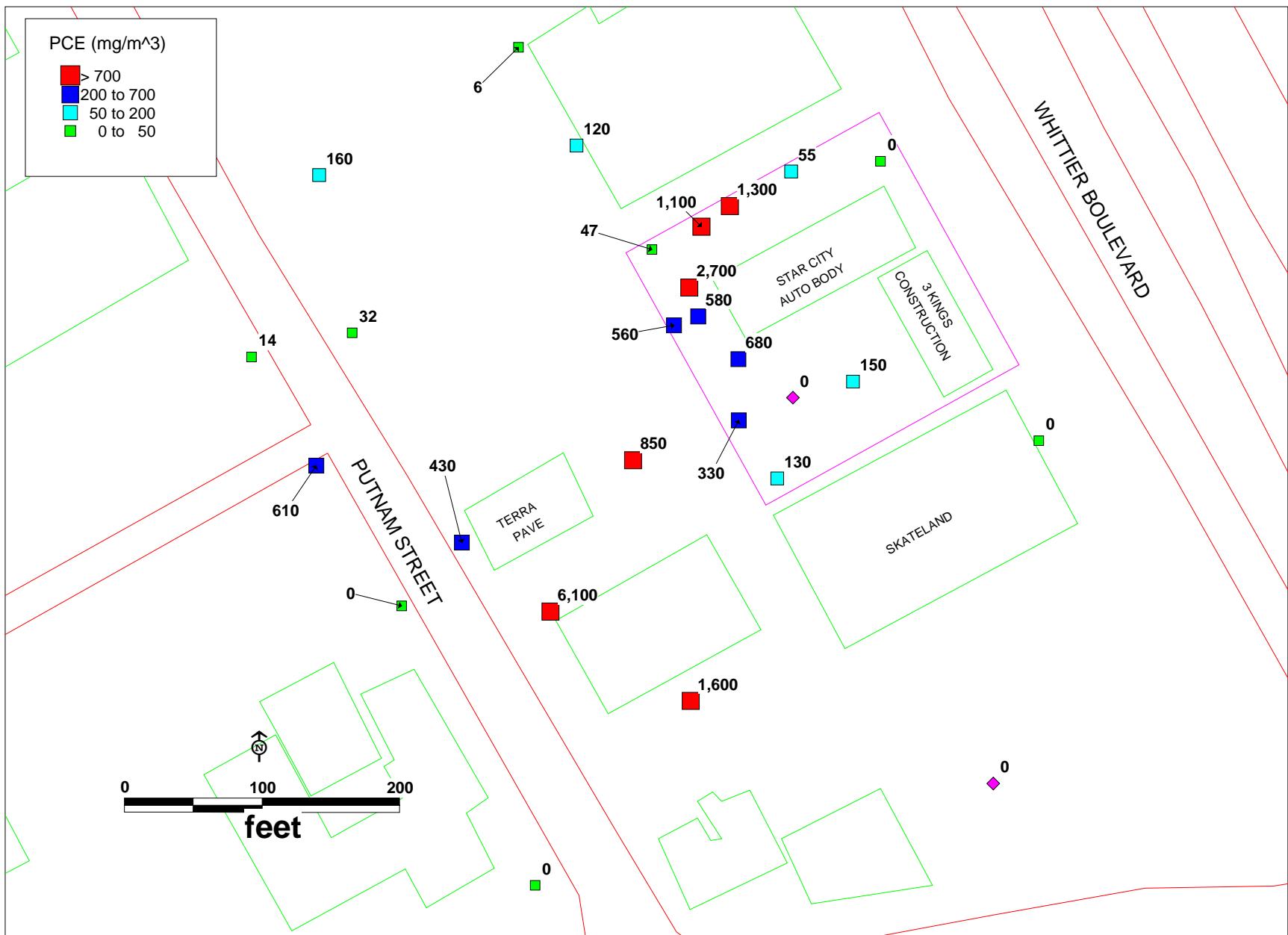


Figure 25 PCE 35 - 59 Feet

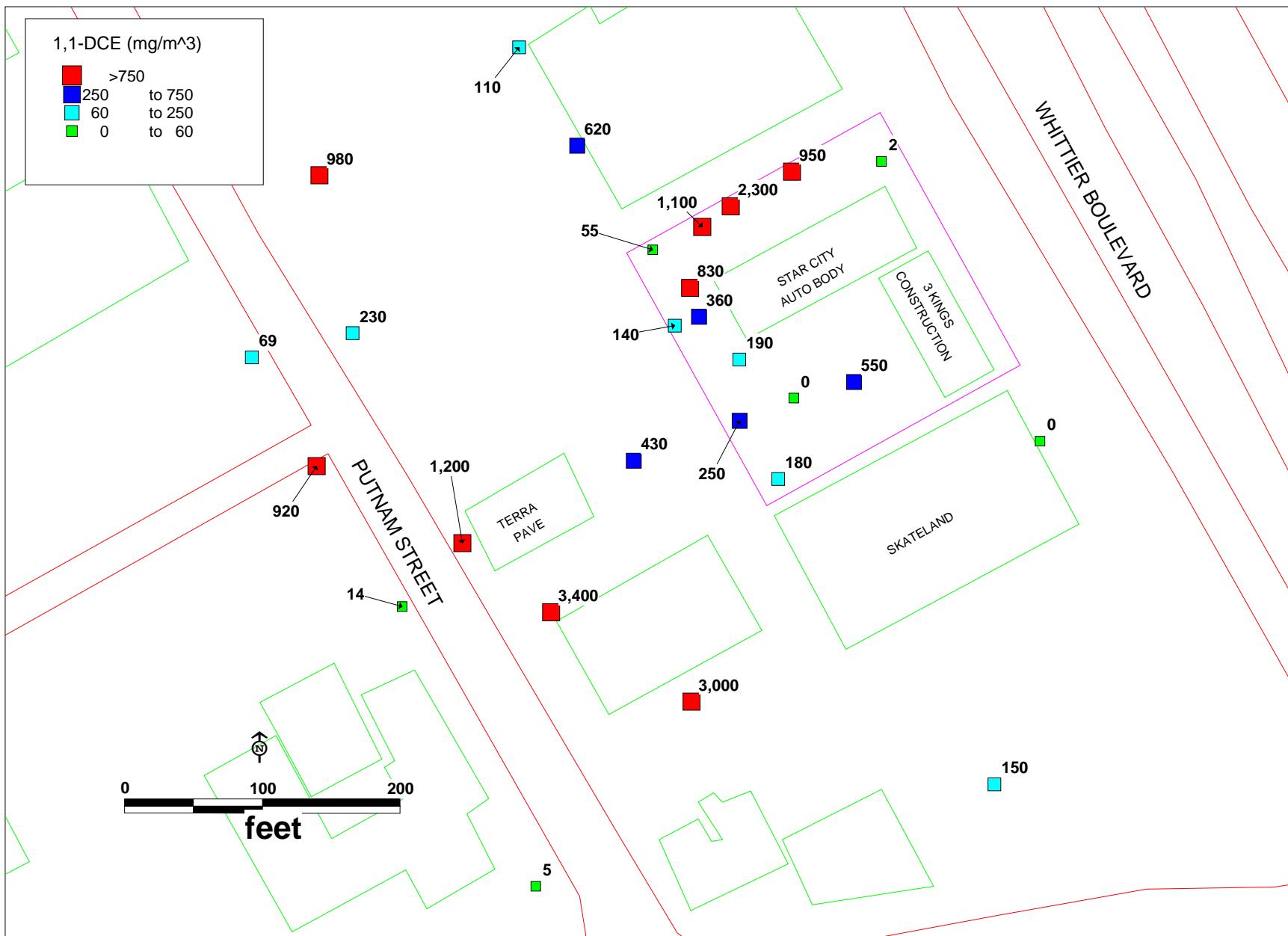


Figure 26 1,1-DCE 35 - 59 Feet

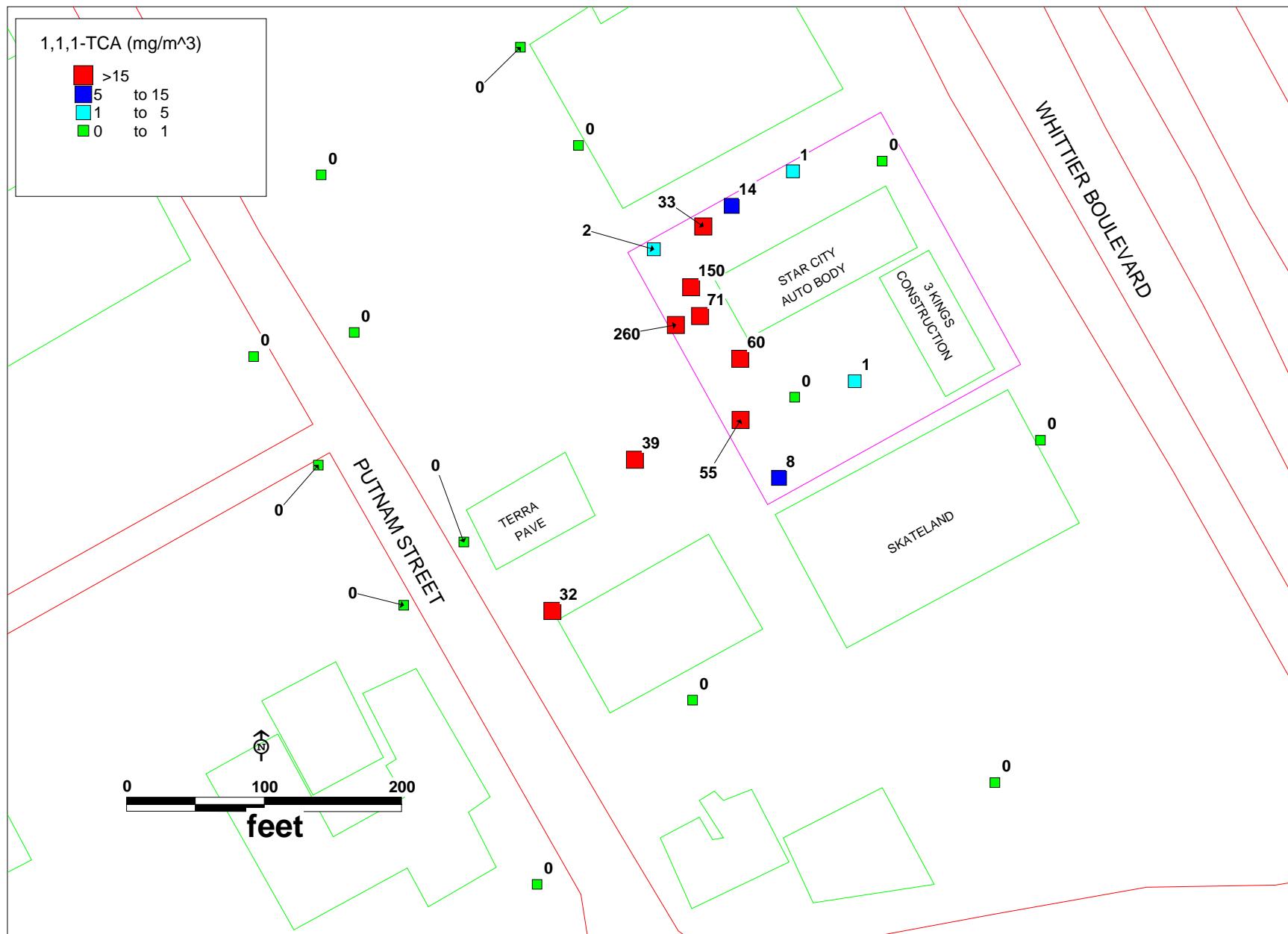


Figure 27 1,1,1-TCA 35 - 59 Feet

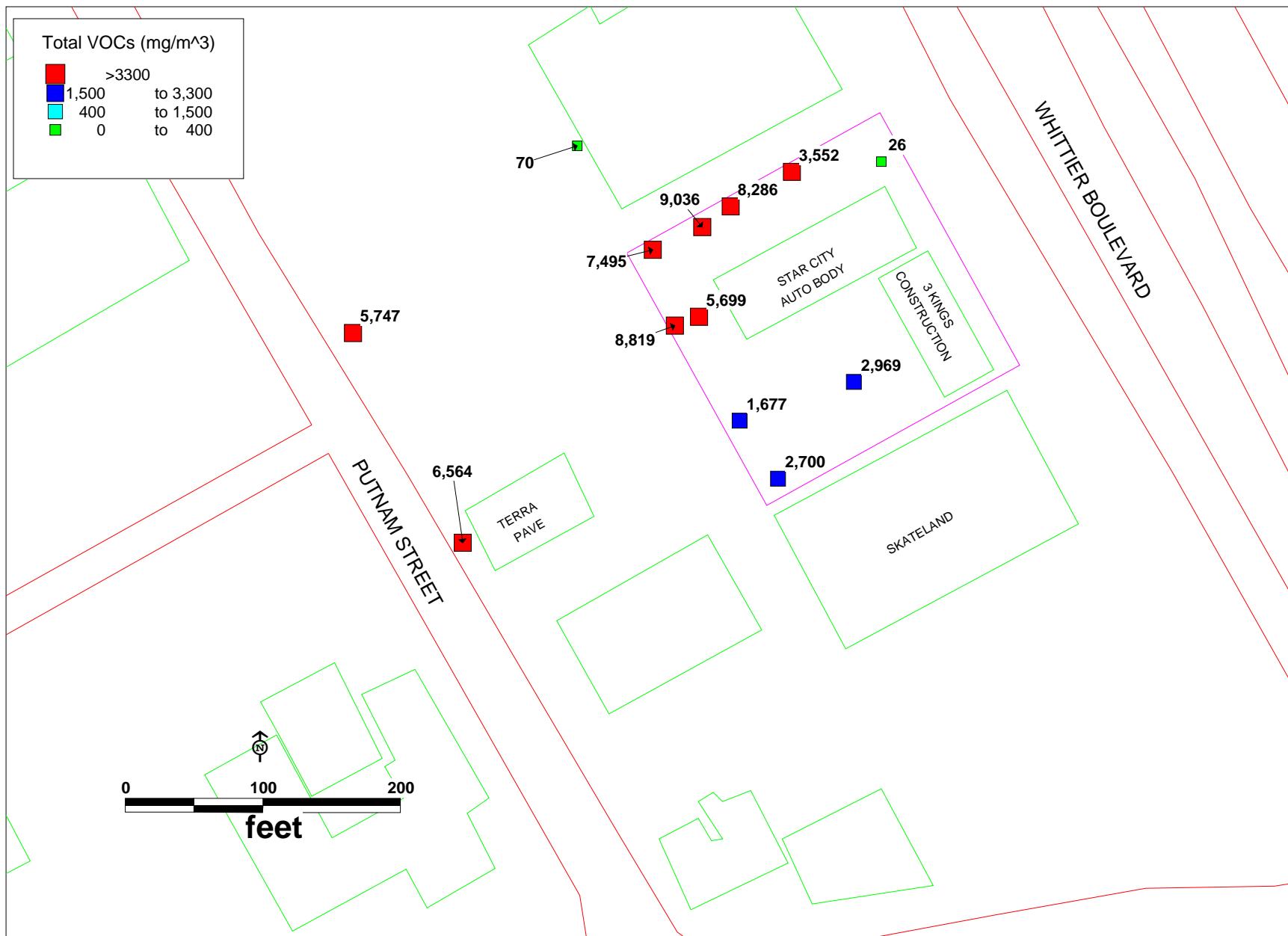


Figure 28 Total VOCs >60 Feet

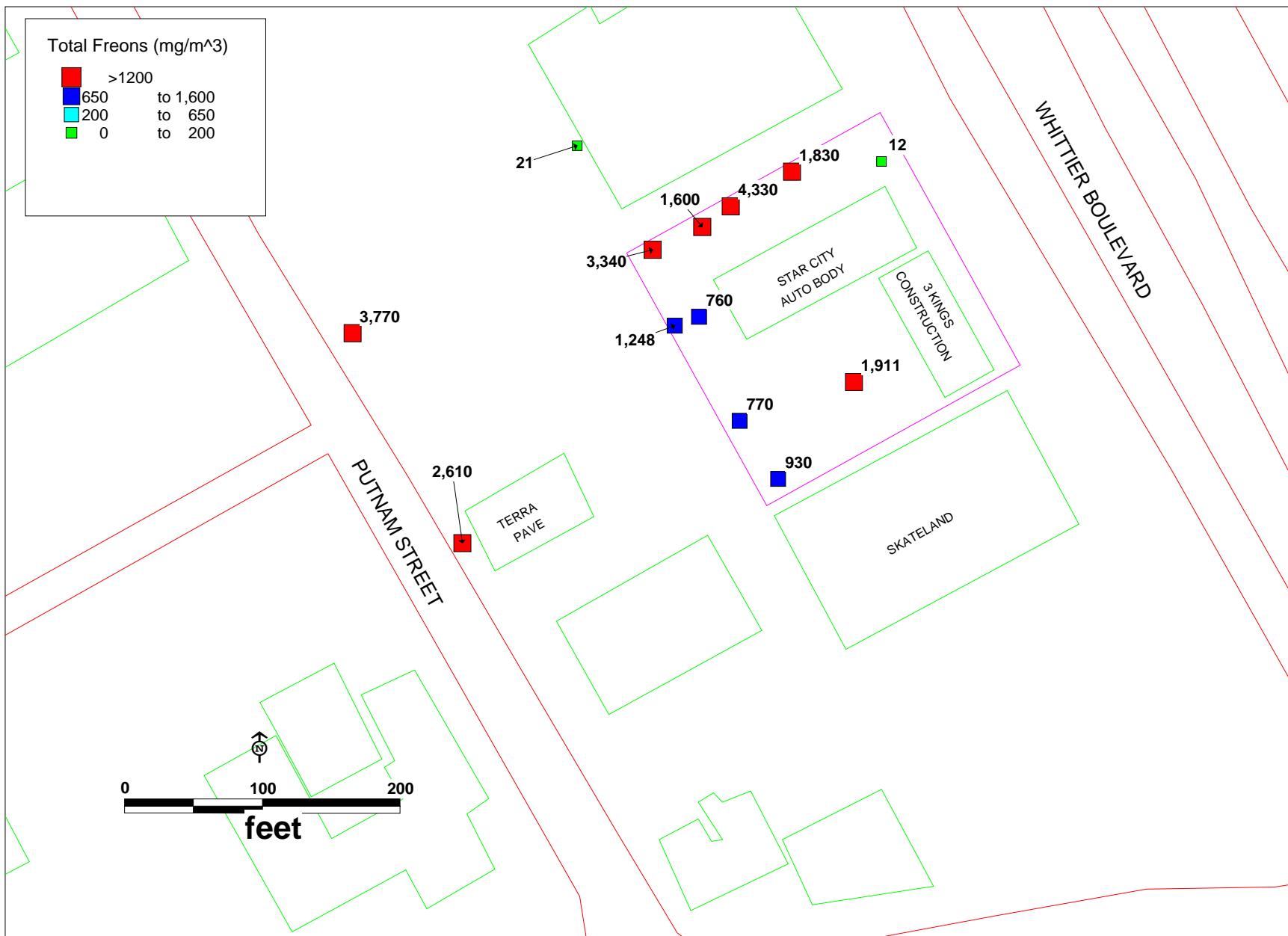


Figure 29 Total Freons >60 Feet

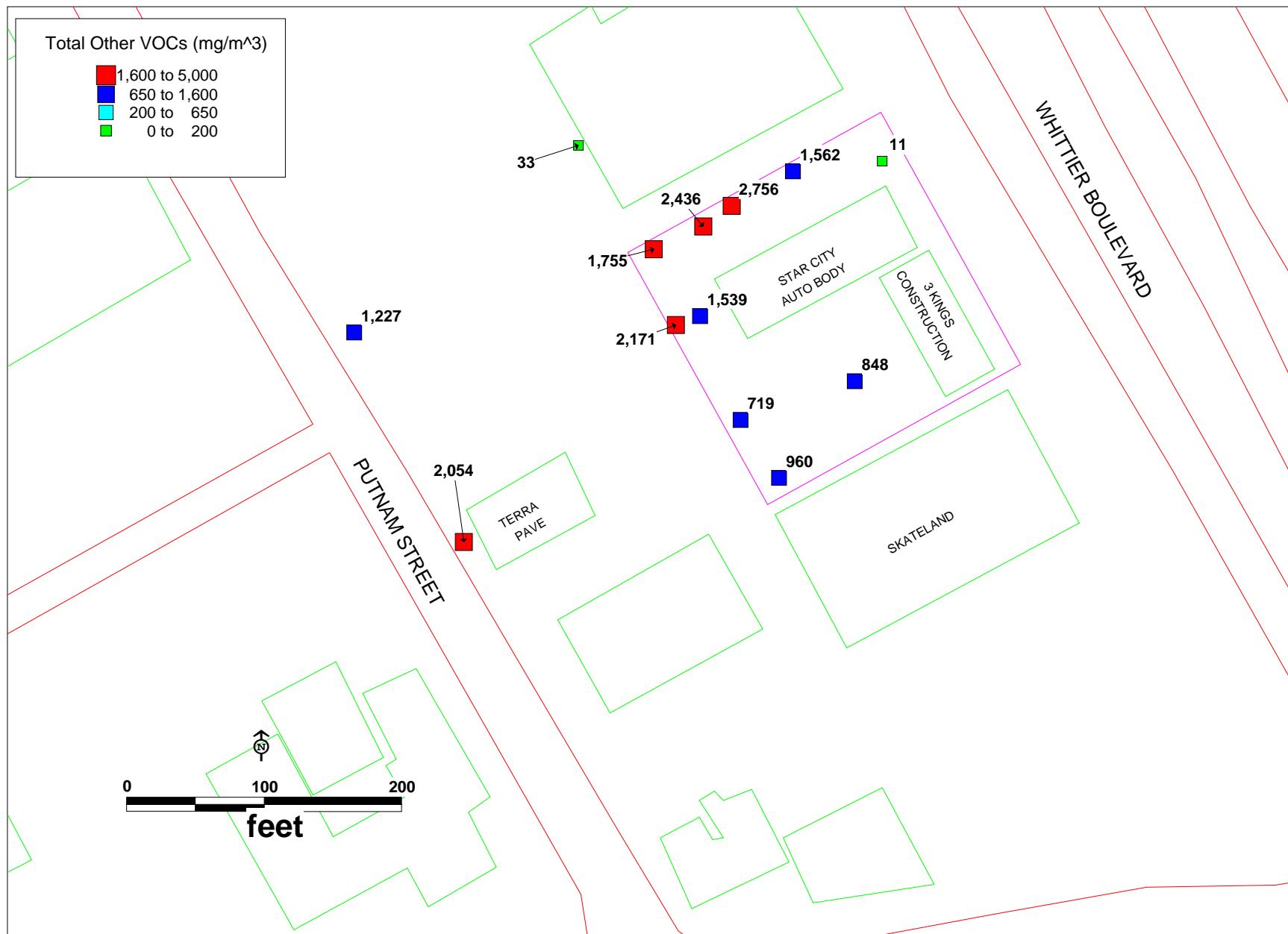


Figure 30 Total Other VOCs (TVOC-PCE-Total Freons) >60 Feet

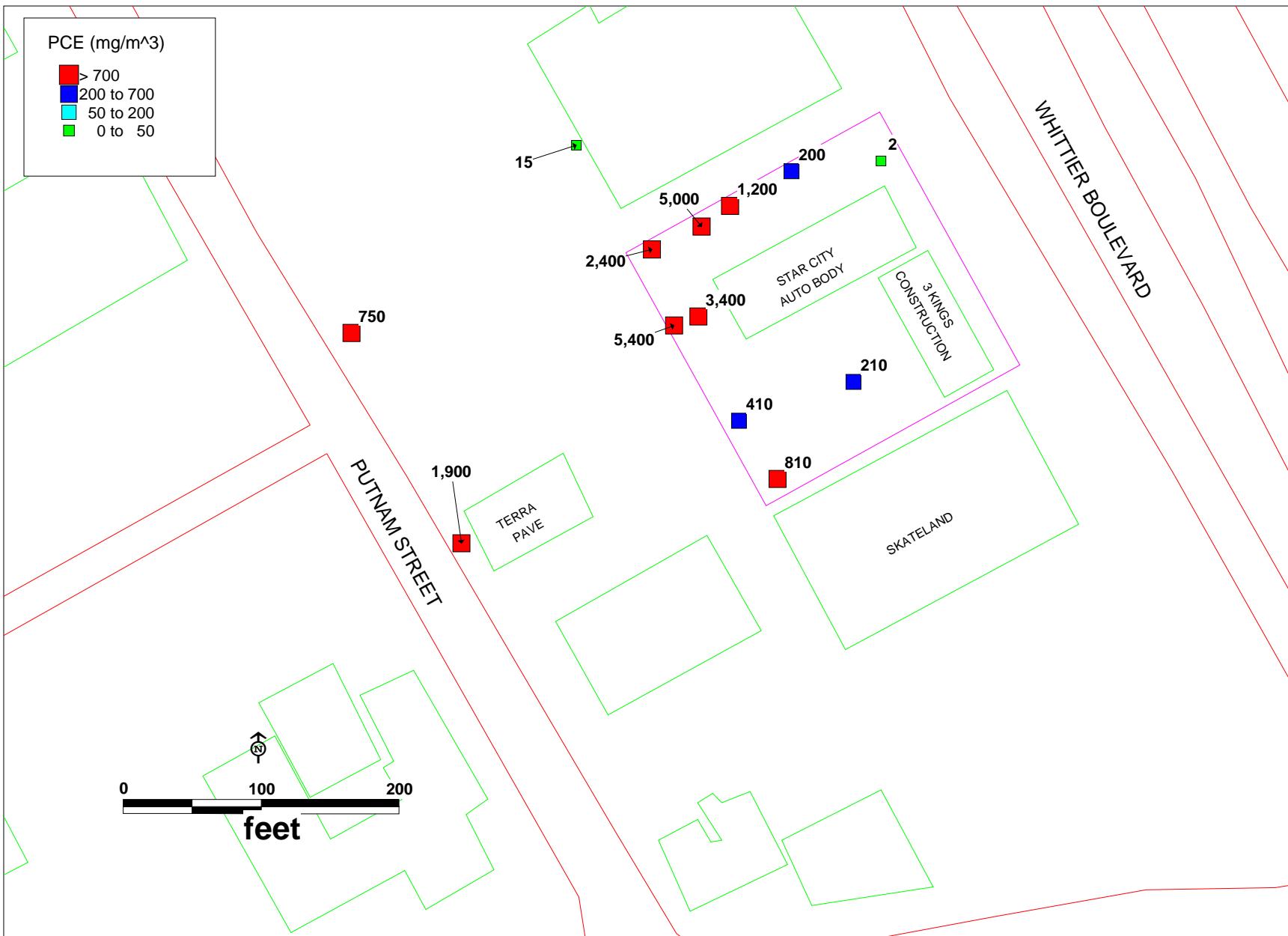


Figure 31 PCE >60 Feet

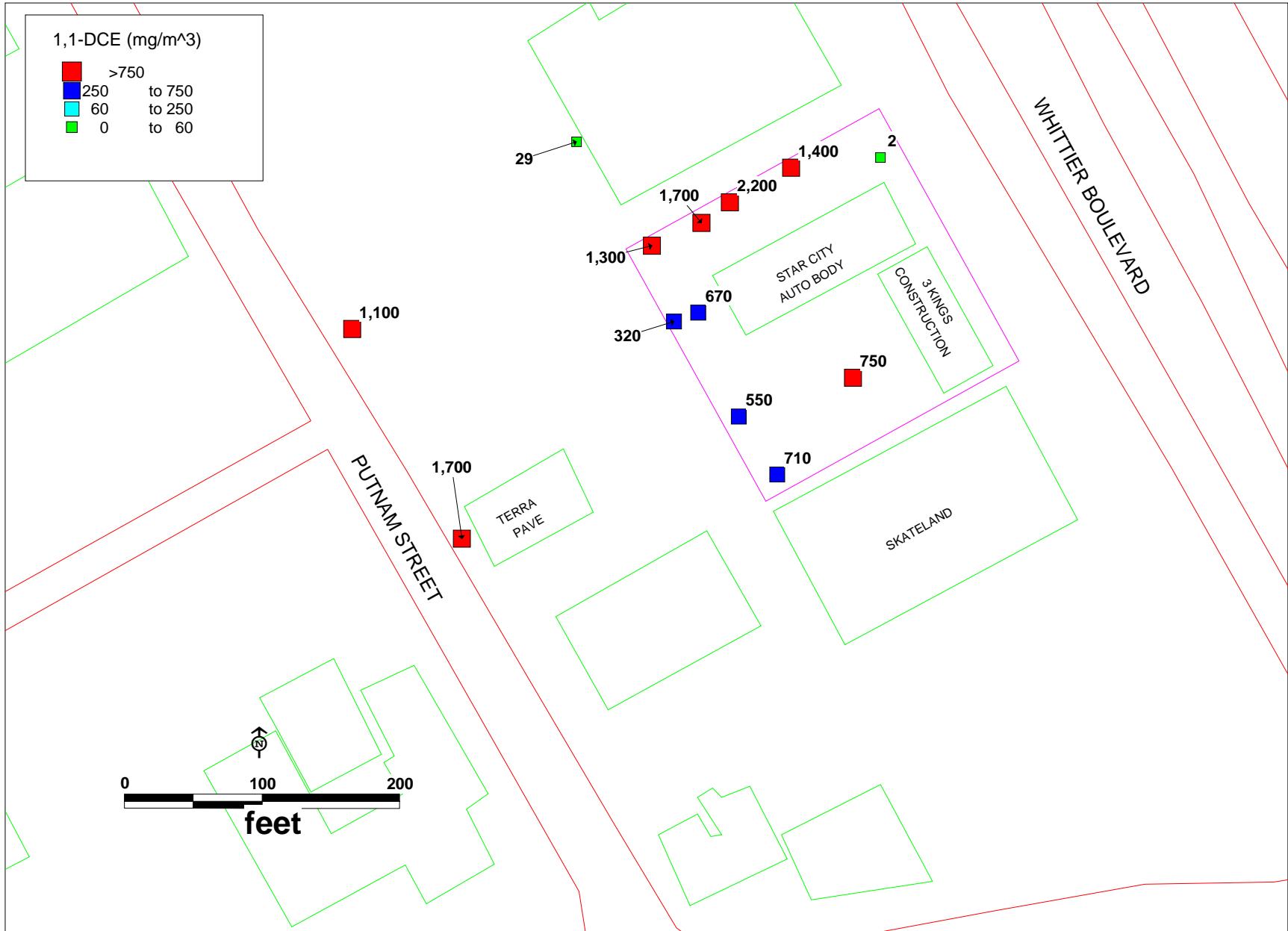


Figure 32 1,1-DCE >60 Feet

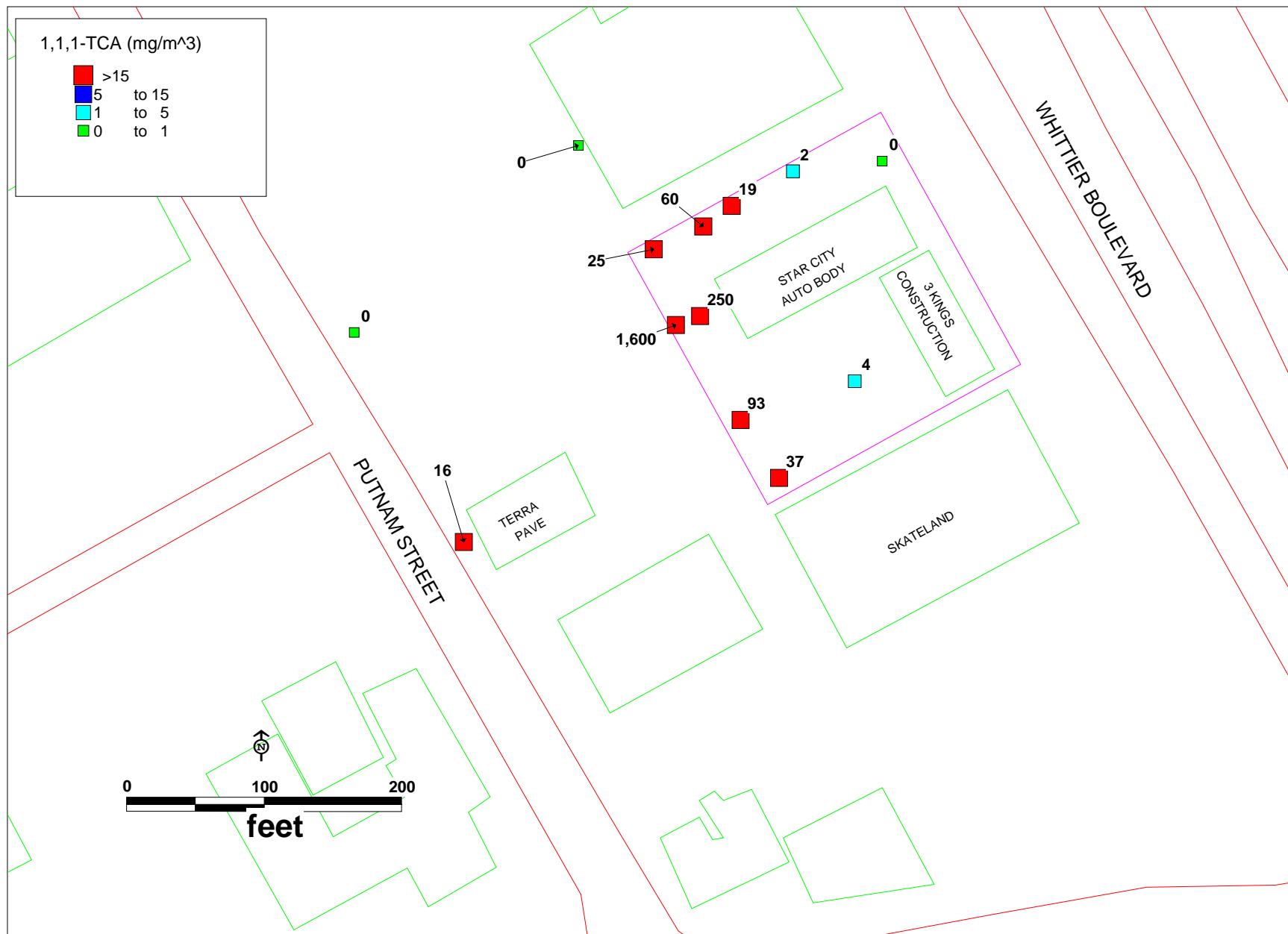
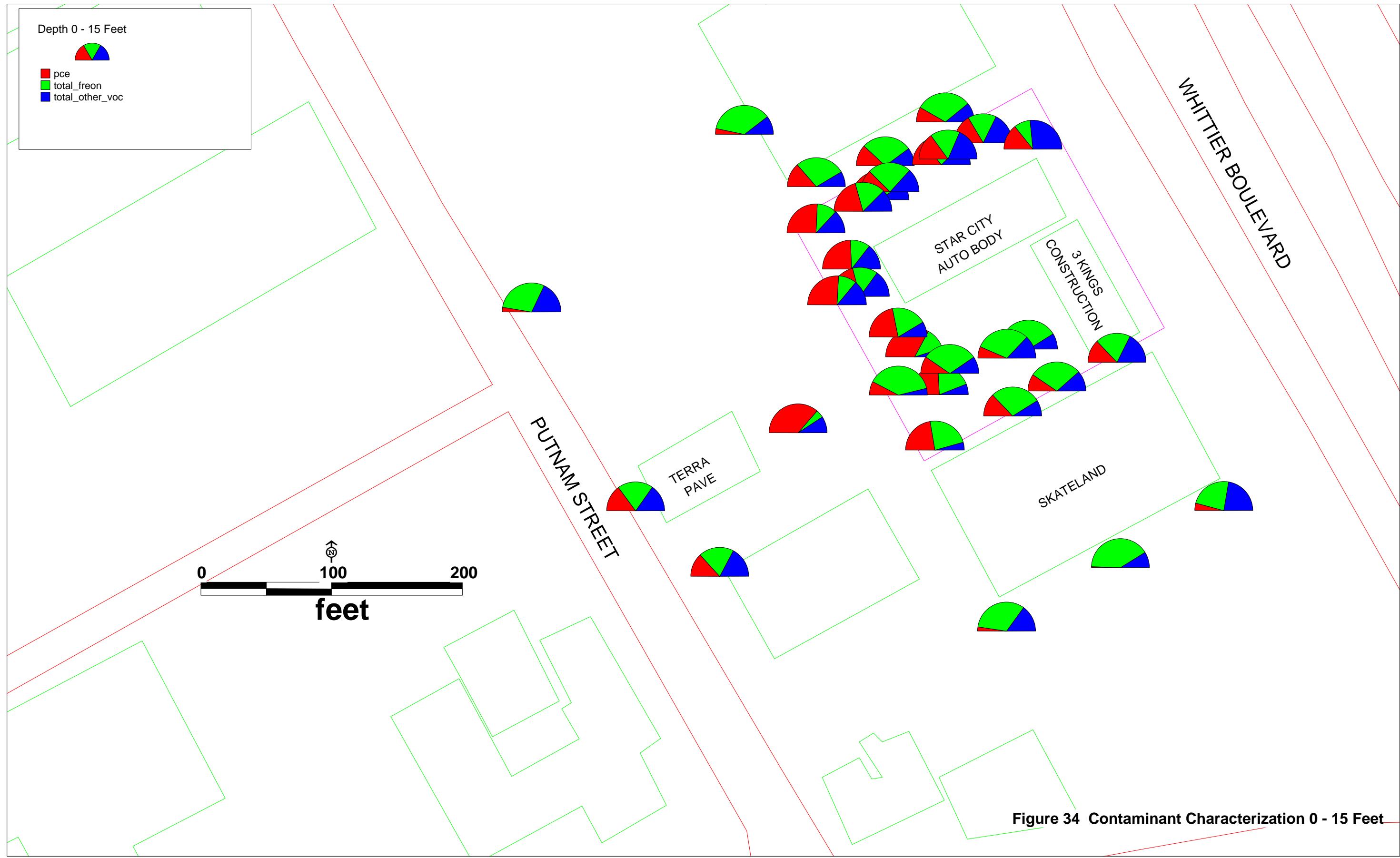
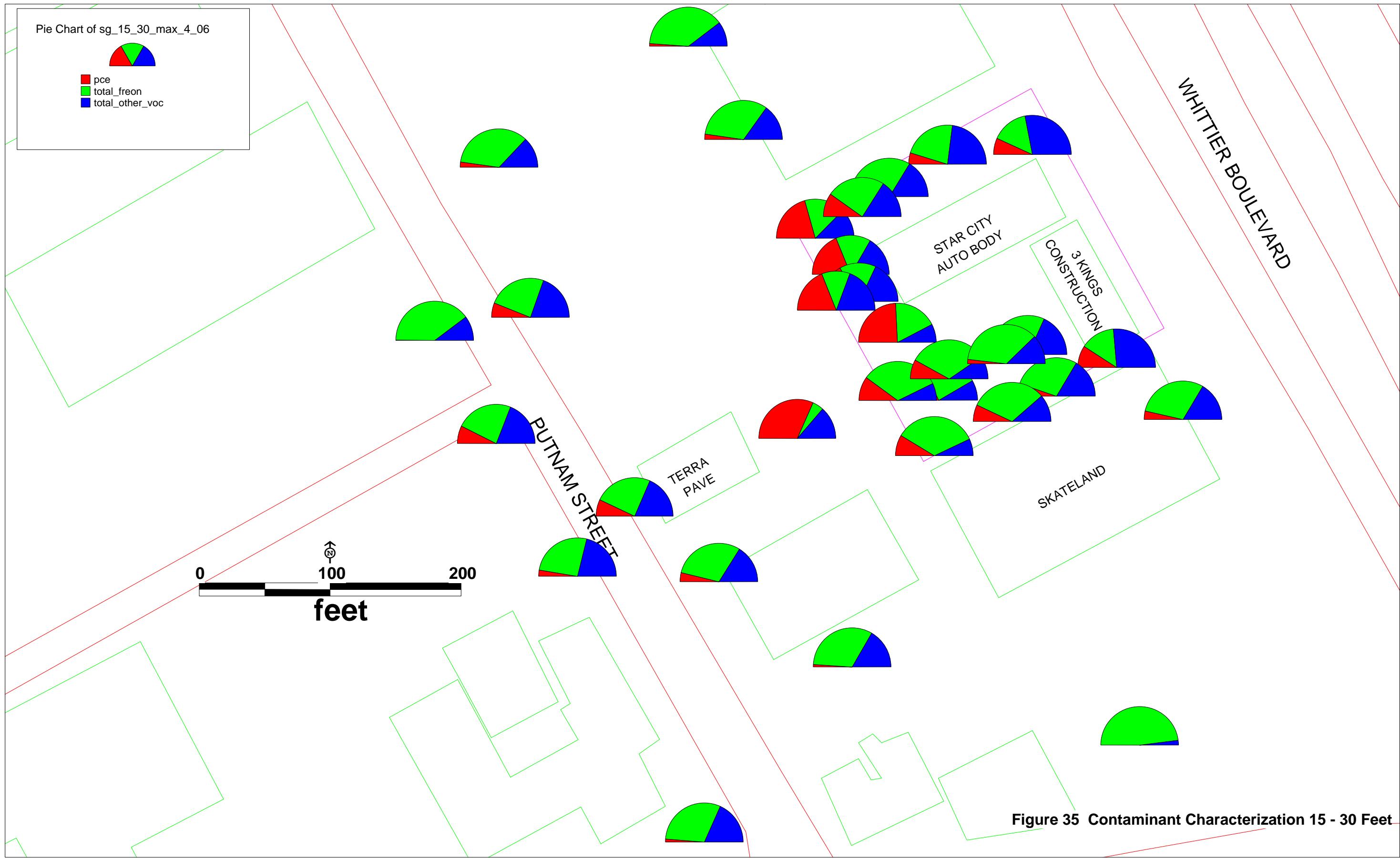
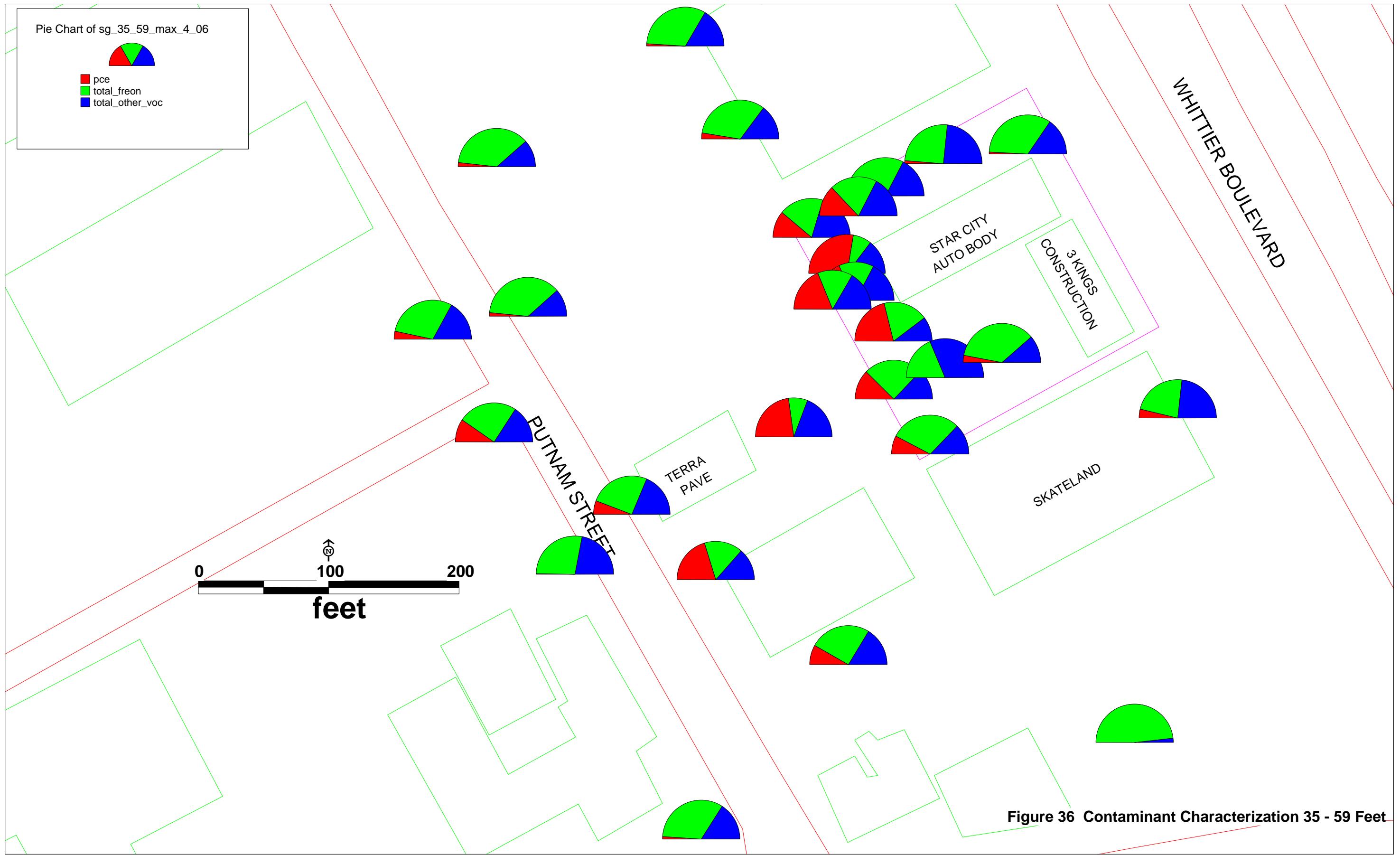


Figure 33 1,1,1-TCA >60 Feet







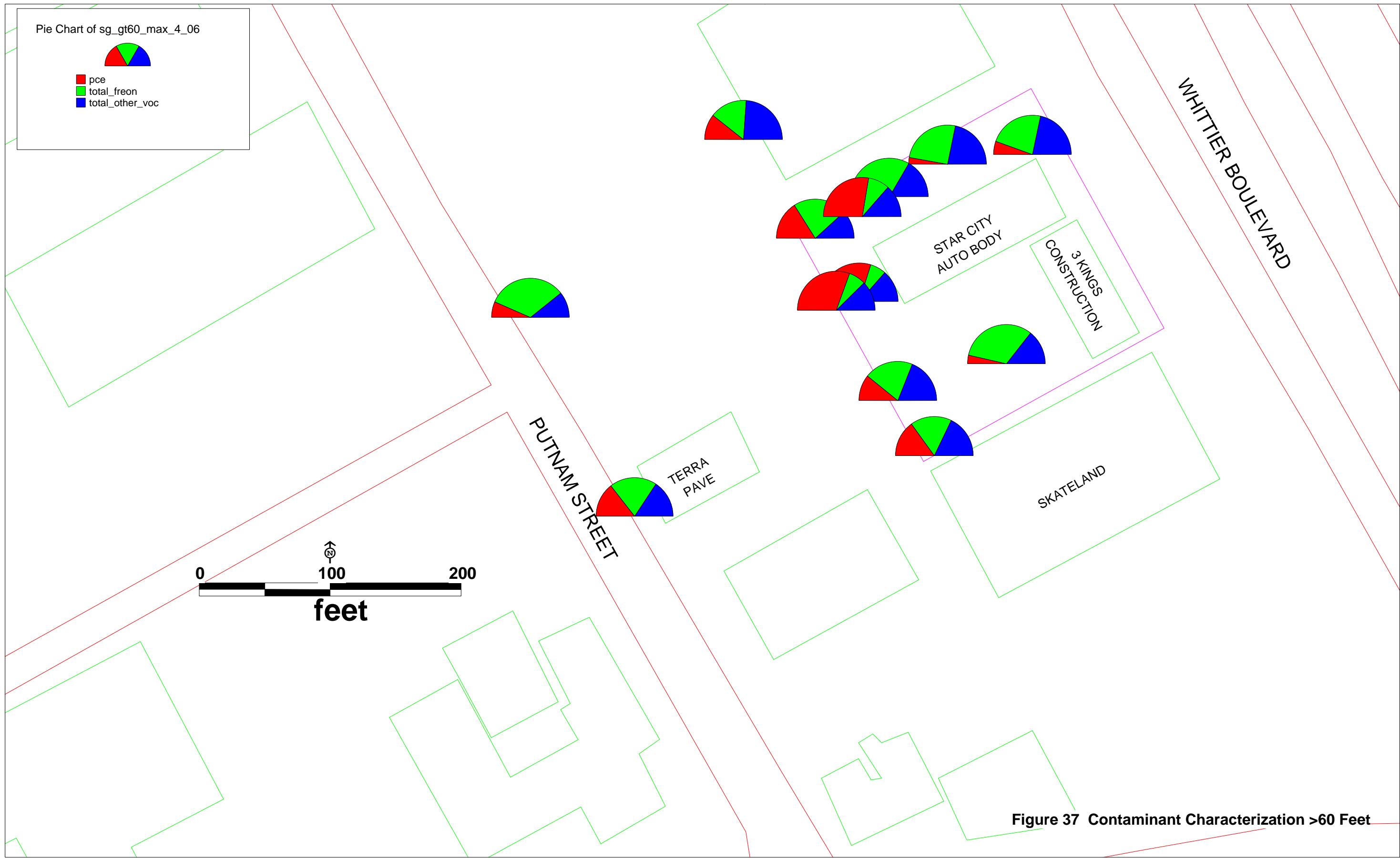


Figure 38. MIP-8 PID and TVOCs in Adjacent Soil

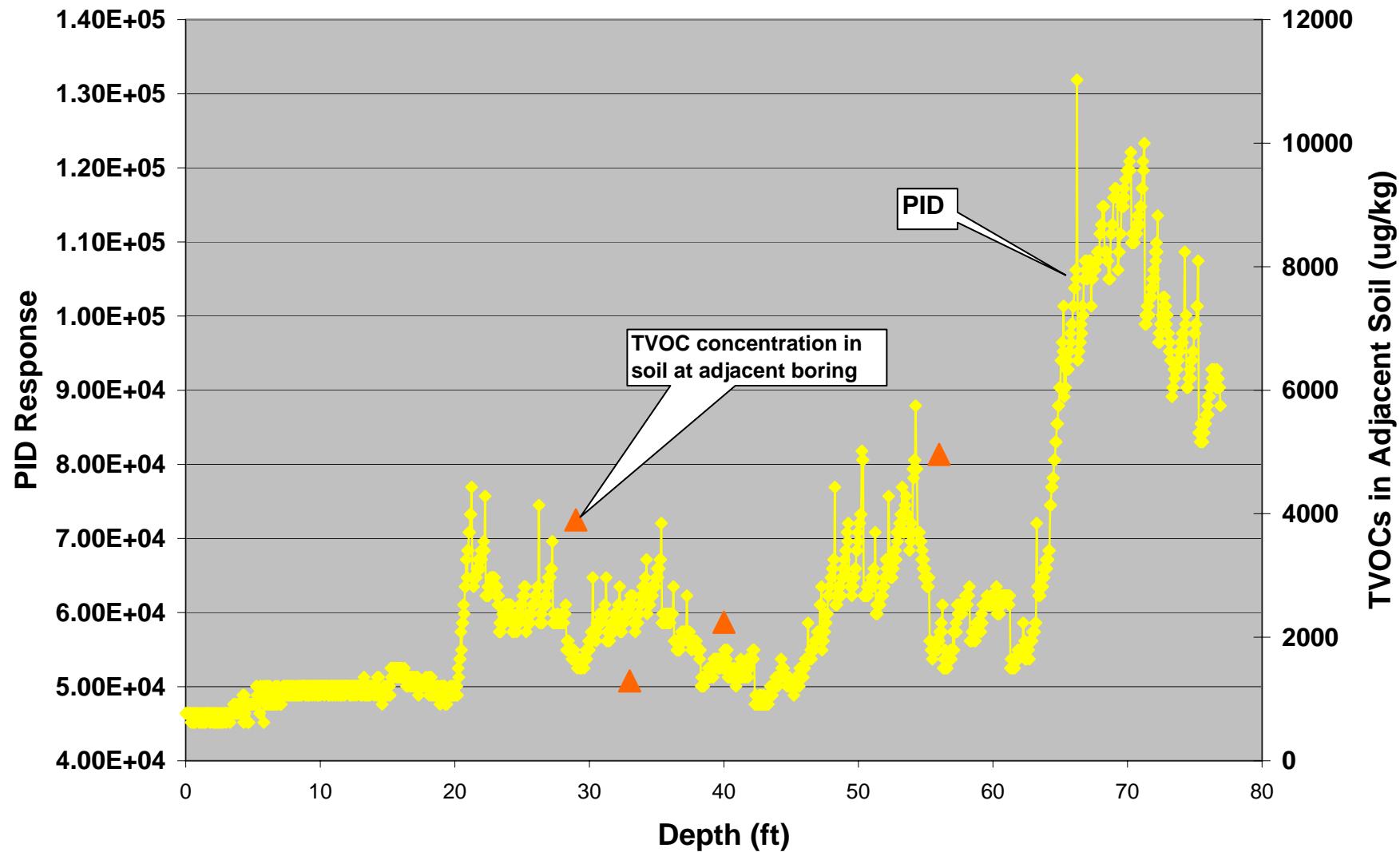


Figure 39. MIP-14 PID and TVOCs in Adjacent Soil

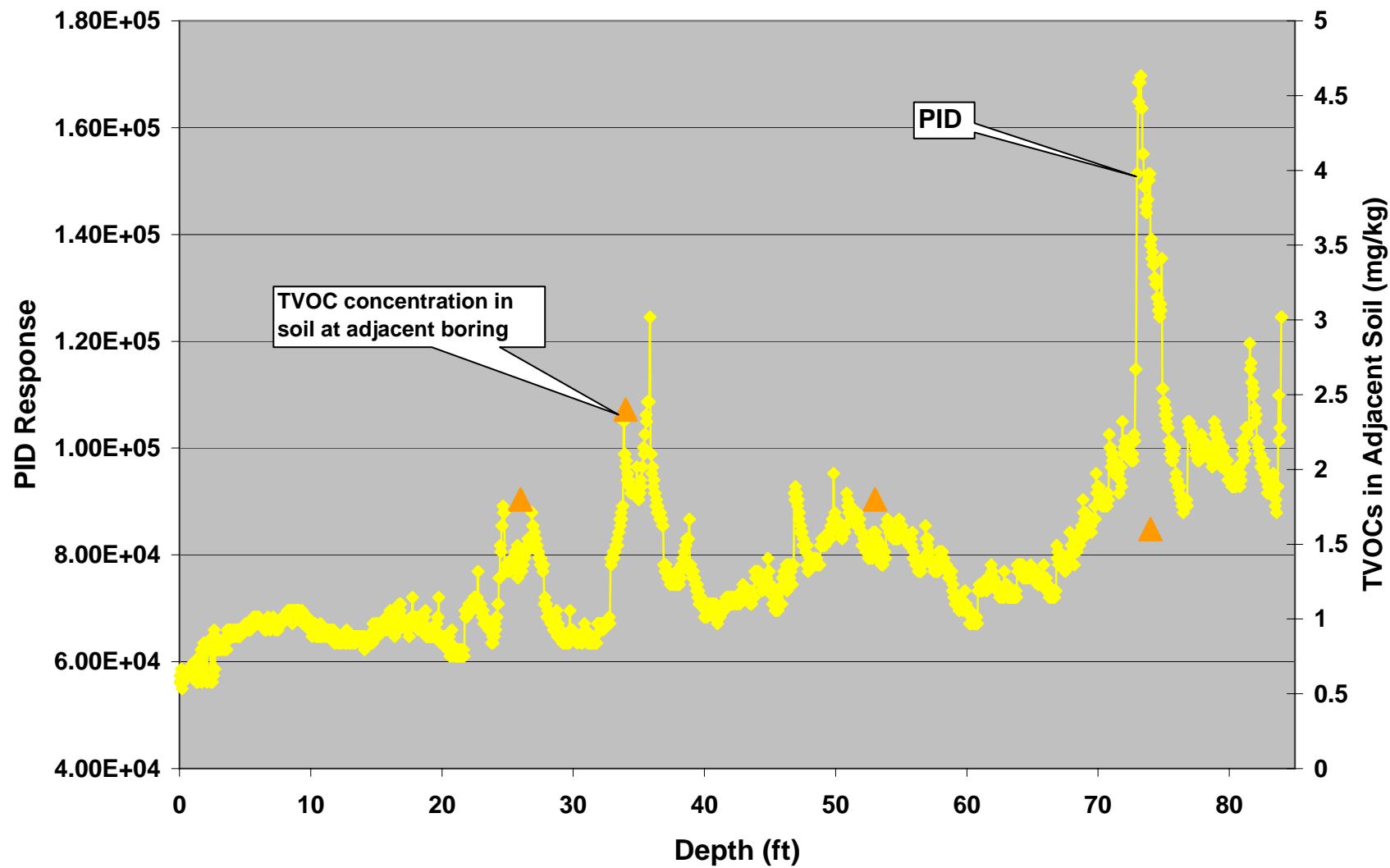


Figure 40. MIP-21 PID and TVOCs in Adjacent Soil

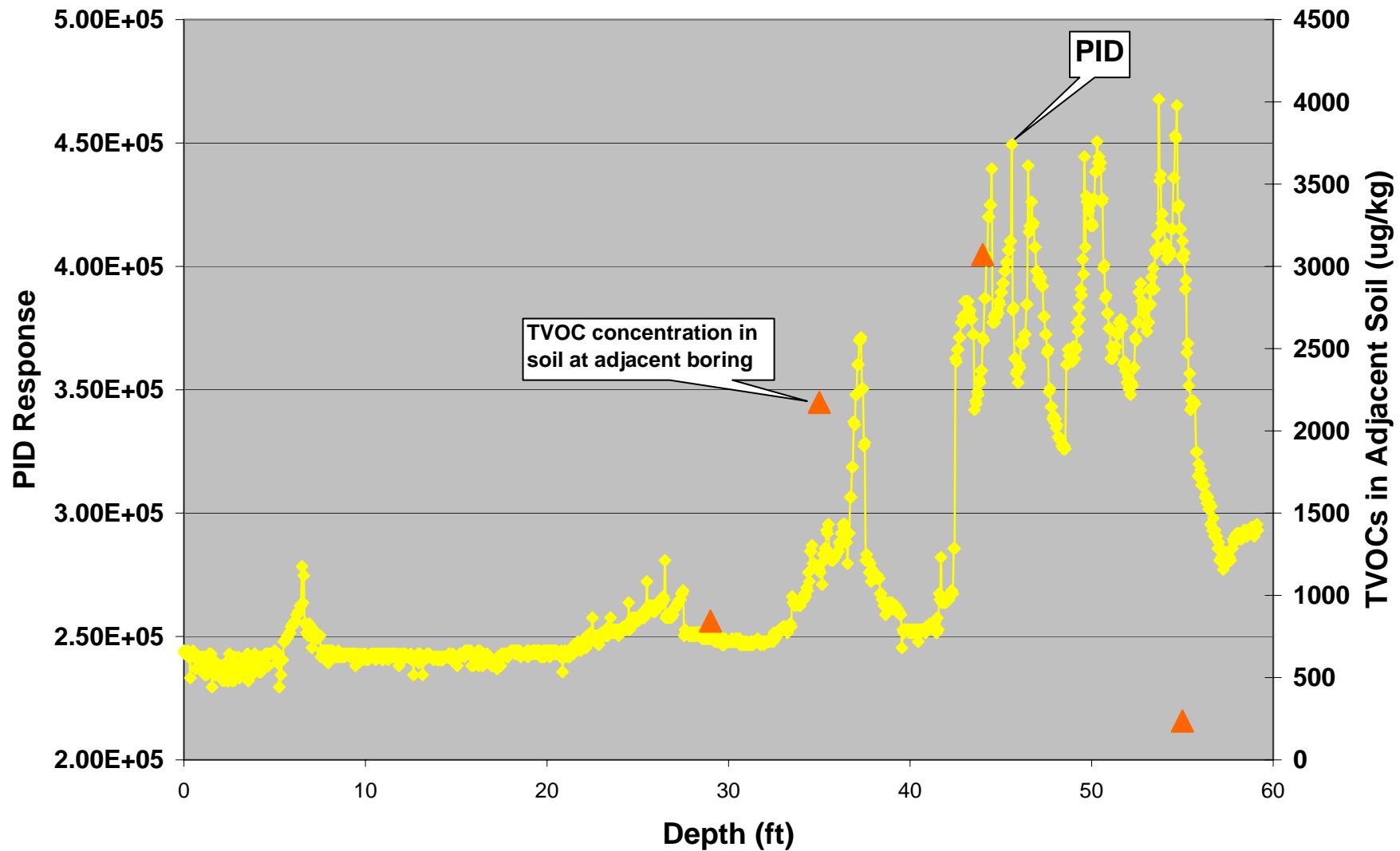


Figure 41. MIP-22 PID and TVOCs in Adjacent Soil

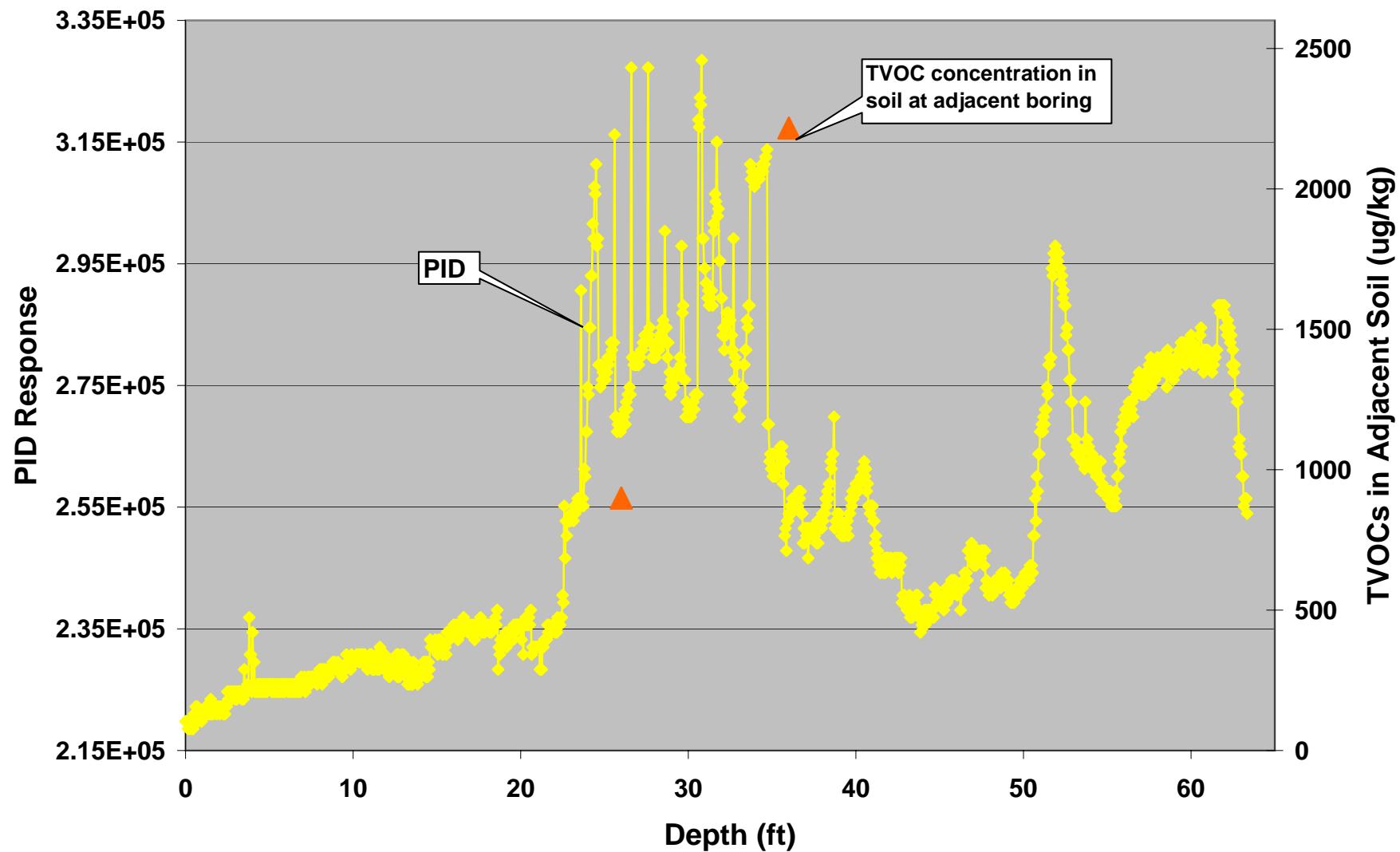


Figure 42. MIP-26 PID and TVOCs in Adjacent Soils

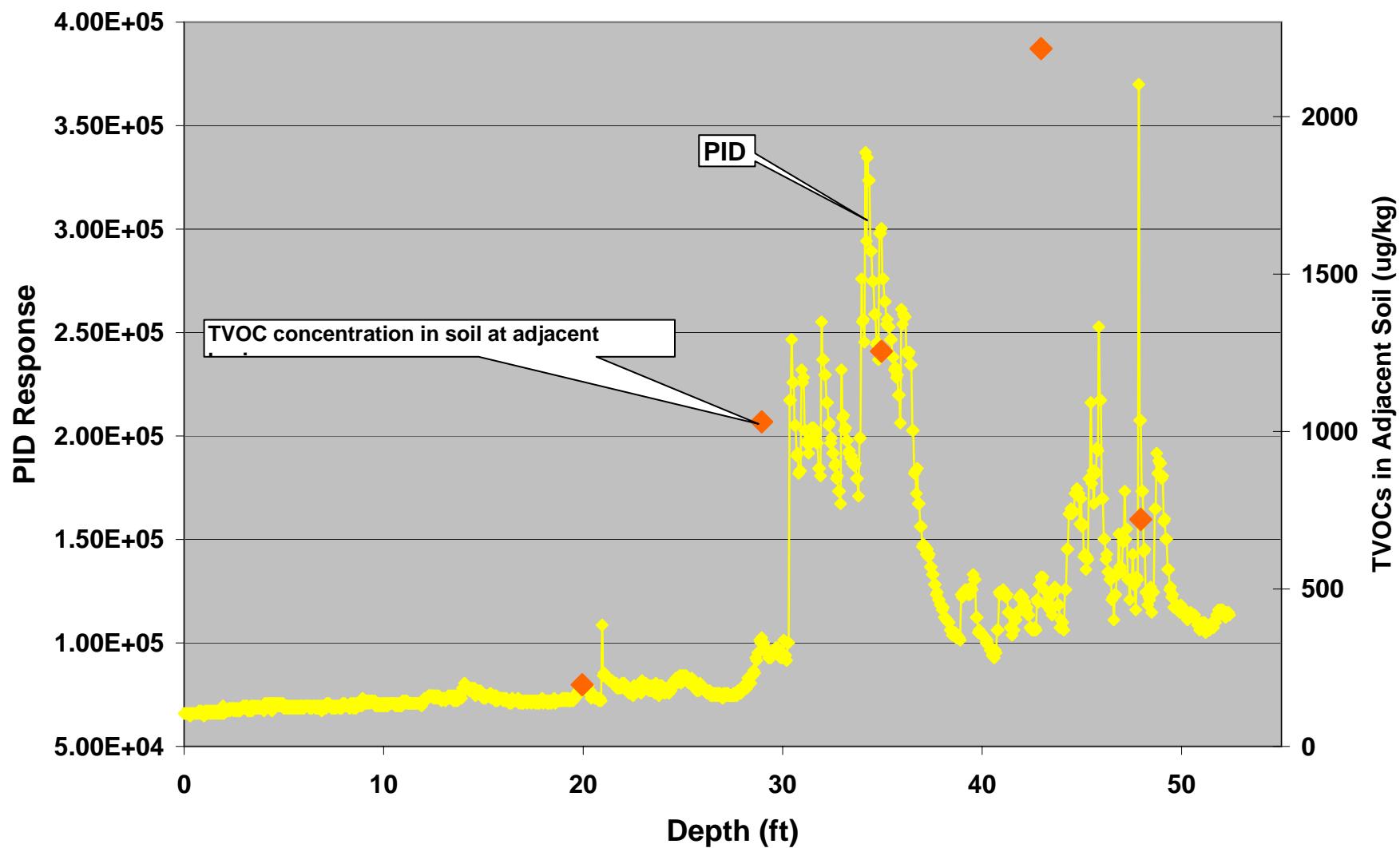




Figure 43 Location of Additional Soil Vapor Probes

TABLES

Table 1
Omega Chemical Superfund Site
Summary of Soil Vapor Analytical Data

Analyte	Probe Number	VP-20				VP-21				VP-22				VP-23				VP-24				VP-25				VP-26				VP-29			
		Sample Depth (feet bgs)	21	29	51	20	29	35	43	48	18	27	39	22	29	45	45	27	35	39	25	29	36	20	29	45	22	29	36	20	29	48	
Sample Date	06-Mar-06	06-Mar-06	06-Mar-06	08-Mar-06	09-Mar-06	09-Mar-06	09-Mar-06	09-Mar-06	06-Mar-06	07-Mar-06	07-Mar-06	07-Mar-06	06-Mar-06	06-Mar-06	06-Mar-06	07-Mar-06	07-Mar-06	06-Mar-06															
Toluene VOCs	323	311	355	189	261	297	318	940	102	2	18	18	714	4865	4160	9	94	48	212	1376	271	270	4622										
1,1,2-Trichloroethane	0.67 U	0.76 U	0.85 U	0.33 U	0.31 U	0.44 U	0.42 U	5.3 U	1.6 U	0.016 U	0.073 U	0.065 U	0.026 U	0.03 U	0.03 U	0.03 U	1.6 U	8.5 U	8.3 U	0.0093 U	0.01 U	0.006 U	1.4 U	0.12 U	0.31 U	3.2 U	3.2 U	4.1 U	6.2 U				
1,1,2,2-Tetrachloroethane	0.85 U	0.96 U	1.1 U	0.42 U	0.39 U	0.55 U	0.54 U	6.6 U	2 U	0.02 U	0.092 U	0.082 U	0.082 U	0.045 U	0.038 U	0.038 U	1.6 U	11 U	10 U	0.012 U	0.013 U	0.008 U	1.7 U	0.16 U	0.39 U	4.1 U	4.1 U	5.1 U	7.9 U				
1,1,2-Trichloro-1,2,2-Trifluoroethane	190	180	170	74	63	100	120	1300	420	3.6	16	15	0.6	9.2	9.9	9.4	590	4200	3500	3.3	3.8	1.3	600	19	100	810	1500	1500	2800				
1,1,2-Trichloro-1,2,2-Tetrafluoroethane	0.67 U	0.76 U	0.85 U	0.33 U	0.31 U	0.44 U	0.43 U	5.3 U	1.6 U	0.016 U	0.073 U	0.065 U	0.065 U	0.036 U	0.03 U	0.03 U	1.3 U	8.5 U	8.3 U	0.0093 U	0.01 U	0.006 U	1.4 U	0.12 U	0.31 U	3.2 U	3.2 U	4.1 U	6.2 U				
1,1-Dichloroethane	0.5 U	0.56 U	0.63 U	0.24 U	0.23 U	0.32 U	0.32 U	3.9 U	1.2 U	0.012 U	0.054 U	0.049 U	0.048 U	0.026 U	0.023 U	0.023 U	0.94 U	6.3 U	6.2 U	0.0069 U	0.0075 U	0.0047 U	1 U	0.093 U	0.23 U	2.4 U	2.4 U	3 U	4.6 U				
1,1-Dichloroethene	0.56	56	101	63	71	96	920	300	33	0.3	0.4	0.5	0.5	2	2	2	29	150	140	0.59	0.39	1.06	17	60	200	640	620	500					
1,2-Dichloroethane	3.7 U	4.1 U	4.3 U	1.8 U	1.7 U	2.4 U	2.4 U	20	8 U	0.017 U	0.04 U	0.035 U	0.19 U	0.17 U	0.17 U	0.17 U	7.4 U	16 U	16 U	0.0084 U	0.055 U	0.03 U	16 U	16 U	22 U	34 U							
1,2,4-Trimethylbenzene	0.61 U	0.88 U	0.76 U	0.3 U	0.29 U	0.4 U	0.4 U	4.8 U	1.5 U	0.016	0.066 U	0.059 U	0.059 U	0.023 U	0.028 U	0.028 U	1.1 U	7.6 U	7.5 U	0.0084 U	0.0092 U	0.034	1.2 U	0.11 U	0.28 U	2.9	2.9	3.7 U	5.6 U				
1,2-Dibromoethane	0.95 U	1.1 U	1.2 U	0.46 U	0.44 U	0.62 U	0.61 U	7.4 U	2.3 U	0.022 U	0.1 U	0.092 U	0.091 U	0.05 U	0.045 U	0.043 U	1.8 U	12 U	12 U	0.013 U	0.014 U	0.009 U	1.9 U	0.18 U	0.44 U	4.6 U	4.6 U	5.7 U	8.8 U				
1,2-Dichloro-1,2,2-Tetrafluoroethane	0.86 U	0.98 U	1.1 U	0.42 U	0.4 U	0.56 U	0.56 U	6.8 U	2.1 U	0.02 U	0.094 U	0.084 U	0.083 U	0.039 U	0.039 U	0.039 U	1.6 U	11 U	11 U	0.012 U	0.013 U	0.008 U	1.7 U	0.16 U	0.4 U	4.2 U	4.2 U	5.2 U	8 U				
1,2-Dichlorobenzene	0.74 U	0.84 U	0.93 U	0.36 U	0.34 U	0.48 U	0.48 U	5.8 U	1.8 U	0.018 U	0.071 U	0.072 U	0.072 U	0.039 U	0.034 U	0.034 U	1.4 U	9.3 U	9.2 U	0.01 U	0.011 U	0.007 U	1.5 U	0.14 U	0.34 U	3.6 U	3.6 U	4.5 U	6.9 U				
1,2-Dichloroethane	0.5 U	0.56 U	0.63 U	0.24 U	0.23 U	0.32 U	0.32 U	3.9 U	1.2 U	0.012 U	0.054 U	0.049 U	0.048 U	0.026 U	0.023 U	0.023 U	0.94 U	6.3 U	6.2 U	0.0069 U	0.0075 U	0.0047 U	1 U	0.093 U	0.23 U	2.4 U	2.4 U	3 U	4.6 U				
1,2-Dichloropropane	0.57 U	0.64 U	0.72 U	0.28 U	0.27 U	0.37 U	0.37 U	4.5 U	1.4 U	0.014 U	0.051 U	0.049 U	0.049 U	0.026 U	0.025 U	0.025 U	1.1 U	7.3 U	7.2 U	0.0079 U	0.0086 U	0.0049 U	1.2 U	0.11 U	0.26 U	2.7 U	2.7 U	3.4 U	5.3 U				
1,3-Dibromo-2-methylbenzene	0.71 U	0.82 U	0.88 U	0.3 U	0.29 U	0.4 U	0.4 U	5.8 U	1.8 U	0.017 U	0.065 U	0.063 U	0.063 U	0.024 U	0.024 U	0.024 U	1.1 U	7.3 U	7.2 U	0.0084 U	0.0092 U	0.01	1.2 U	0.11 U	0.26 U	2.7 U	2.7 U	3.4 U	5.3 U				
1,3-Dimethylbenzene	0.27 U	0.31 U	0.34 U	0.13 U	0.13 U	0.18 U	0.18 U	2.1 U	0.6 U	0.016 U	0.066 U	0.065 U	0.065 U	0.023 U	0.023 U	0.023 U	0.83 U	3.4 U	3.4 U	0.0084 U	0.0092 U	0.01	1.2 U	0.11 U	0.28 U	2.9	2.9	3.7 U	5.6 U				
1,3-Dichlorobenzene	0.74 U	0.84 U	0.93 U	0.36 U	0.34 U	0.48 U	0.48 U	5.8 U	1.8 U	0.018 U	0.081 U	0.072 U	0.072 U	0.039 U	0.034 U	0.034 U	1.4 U	9.3 U	9.2 U	0.01 U	0.011 U	0.007 U	1.5 U	0.14 U	0.34 U	3.6 U	3.6 U	4.5 U	6.9 U				
1,4-Dichlorobenzene	0.74 U	0.84 U	0.93 U	0.36 U	0.34 U	0.48 U	0.48 U	5.8 U	1.8 U	0.018 U	0.081 U	0.072 U	0.072 U	0.039 U	0.034 U	0.034 U	1.4 U	9.3 U	9.2 U	0.01 U	0.011 U	0.007 U	1.5 U	0.14 U	0.34 U	3.6 U	3.6 U	4.5 U	6.9 U				
1,4-Dioxane	1.8 U	2 U	2.2 U	0.87 U	0.82 U	1.2 U	1.1 U	14 U	4.3 U	0.042 U	0.19 U	0.071 U	0.071 U	0.039 U	0.081 U	0.081 U	3.4 U	22 U	22 U	0.024 U	0.027 U	0.02	3.6 U	33 U	0.82 U	8.6 U	8.6 U	11 U	16 U				
2,2,4-Trimethylpentane	0.58 U	0.65 U	0.73 U	0.28 U	0.27 U	0.39 U	0.37 U	4.5 U	1.4 U	0.014 U	0.056 U	0.056 U	0.057 U	0.033 U	0.073 U	0.073 U	0.026 U	0.026 U	0.026 U	1.1 U	7.3 U	7.1 U	0.047	0.018	0.02	1.2 U	0.11 U	0.27 U	2.8 U	2.8 U	3.5 U	5.3 U	
2-Butanone	0.36 U	0.41 U	0.46 U	0.18 U	0.17 U	0.24 U	0.23 U	2.9 U	0.88 U	0.079	0.1	0.02	0.02	0.054 U	0.083 U	0.084 U	0.069 U	4.6 U	4.5 U	0.076	0.061	0.1	0.73 U	0.68 U	0.17 U	1.8 U	1.8 U	2.2 U	3.4 U				
2-Hexanone	2 U	2.3 U	2.5 U	0.99 U	0.98 U	1.3 U	1.3 U	4.9 U	0.94 U	0.018 U	0.051 U	0.051 U	0.051 U	0.029 U	0.029 U	0.029 U	1.8 U	25 U	25 U	0.028 U	0.03 U	0.019	4.1 U	0.38 U	0.93 U	9.7 U	9.7 U	19 U	31 U				
2-Propanone	1.4 U	1.4 U	1.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	0.4 U	0.017 U	0.066 U	0.065 U	0.065 U	0.024 U	0.024 U	0.024 U	1.8 U	25 U	25 U	0.028 U	0.03 U	0.019	5.1 U	5.1 U	5.6 U	6.6 U	6.6 U	7.2 U	8.2 U				
3-Chloropropene	1.5 U	1.7 U	1.9 U	0.76 U	0.71 U	1 U	1 U	12 U	3.7 U	0.027 U	0.17 U	0.15 U	0.15 U	0.082 U	0.07 U	0.07 U	2.9 U	19 U	19 U	0.021 U	0.023 U	0.014 U	3.1 U	29 U	71 U	7.4 U	7.4 U	9.3 U	14 U				
4-Ethyltoluene	0.61 U	0.68 U	0.76 U	0.3 U	0.28 U	0.4 U	0.39 U	4.8 U	1.5 U	0.017	0.066 U	0.059 U	0.059 U	0.032 U	0.028 U	0.028 U	1.1 U	7.6 U	7.5 U	0.0084 U	0.0092 U	0.014	1.2 U	0.11 U	0.28 U	2.9	2.9	3.7 U	5.6 U				
4-Methyl-2-Pentanone	0.5 U	0.57 U	0.64 U	0.25 U	0.24 U	0.32 U	0.32 U	4 U	1.2 U	0.012 U	0.055 U	0.054 U	0.054 U	0.027 U	0.023 U	0.023 U	0.95 U	6.4 U	6.2 U	0.015	0.076 U	0.09	1 U	0.094 U	0.23 U	2.4 U	2.4 U	3 U	4.7 U				
Acetone	1.2 U	1.3 U	1.5 U	0.57 U	0.54 U	0.76 U	0.76 U	2.6 U	0.9 U	0.017 U	0.066 U	0.065 U	0.065 U	0.032 U	0.034 U	0.034 U	1.7 U	15 U	14 U	0.016	0.076 U	0.09	1 U	0.15 U	0.34 U	5.6 U	5.6 U	11 U	11 U				
Benzene	0.39 U	0.44 U	0.5 U	0.19 U	0.18 U	0.26 U	0.25 U	3.1 U	0.95 U	0.033 U	0.043 U	0.043 U	0.043 U	0.024 U	0.034 U	0.034 U	1.7 U	4.9 U	4.9 U	0.029	0.019	0.02	0.87 U	0.18 U	1.9 U	1.9 U	2.4 U	3.6 U					
Bromodichloromethane	0.57 U	0.64 U	0.72 U	0.28 U	0.26 U	0.37 U	0.36 U	4.5 U	1.4 U	0.014 U	0.062 U	0.062 U	0.062 U	0.035 U	0.036 U	0.036 U	1.1 U	7.2 U	7 U	0.0078 U	0.0086 U	0.0054 U	1.1 U	1.1 U	2.6 U	2.7 U	2.7 U	3.4 U	5.3 U				
Chloroethane	0.32 U	0.37 U	0.41 U	0.16 U	0.15 U	0.21 U	0.21 U	2.6 U	0.79 U	0.0077 U	0.035 U	0.035 U	0.035 U	0.015 U	0.015 U	0.015 U	0.61 U	4.1 U	4 U	0.0049 U	0.0049 U	0.0031	0.68 U	0.06 U	0.15 U	1.6 U	1.6 U	2 U	3 U				
Chlorofrom	0.6 U	0.68 U	0.76 U	0.3 U	0.29 U	0.39 U	0.39 U	4.7 U	1.4 U	0.017 U	0.067 U	0.066 U	0.066 U	0.032 U	0.032 U	0.032 U	1.1 U	7.6 U	7.4 U	0.0072 U	0.0081 U	0.0054 U	1.2 U	0.11 U	0.28 U	2.9	2.9	3.6 U	5.6 U				
Chlorotetrafluoroethane	1.0 U	1.3 U	1.3 U	0.3 U	0.017 U	0.067 U	0.066 U	0.066 U	0.032 U	0.032 U	0.032 U	0.61 U	10 U	10 U	0.0075 U	0.0084 U	0.0055 U	1.2 U	0.11 U	0.28 U	2.9	2.9	3.6 U	5.6 U									
1,1,2,2-Tetrachloroethane	0.49 U	0.56 U	0.64 U	0.24 U	0.23 U	0.32 U	0.32 U	3.8 U	1.2 U	0.012 U	0.063 U	0.064 U	0.064 U	0.037 U	0.026 U	0.026 U	0.92 U	6 U	6 U	0.0068 U	0.0074 U	0.0046 U	0.99 U	0.091 U	0.23 U	2.4 U	2.4 U	3 U	4.5 U				
1,1,2,3-Tetrachloroethane	0.56 U	0.63 U	0.7 U	0.27 U	0.26 U	0.36 U	0.44 U	1.4 U	1.03 U	0.013 U	0.061 U	0.061 U	0.061 U	0.035 U	0.025 U	0.025 U	1 U	7.6 U	7.5 U	0.0077 U	0.0085 U	0.0055 U	1.1 U	0.1 U	0.26 U	2.7 U	2.7 U	3.4 U	5.2 U				
Cyclohexane	0.42 U	0.48 U	0.54 U	0.21 U	0.2 U	0.28 U	0.27 U	3.3 U	1 U	0.01 U	0.046 U	0.047 U	0.047 U	0.022 U	0.019 U	0.019 U	0.8 U	5.4 U	5.2 U	0.0059 U	0.012	0.016	0.86 U	0.079 U	0.2 U	2 U	2 U	2.6 U	3.9 U				
Dibromochloromethane	1 U																																

Table 1
 Omega Chemical Superfund Site
 Summary of Soil Vapor Analytical Data

Analyte	Probe Number	VP-20				VP-21				VP-22				VP-23				VP-24				VP-25				VP-26				
						Duplicate								Duplicate																
		Sample Depth (feet bgs)	21.5	29	51	20	29	35	36	43	48	18	27	39	22	29	45	45	27	35	39	25	29	36	20	29	45	22	29	48
Perchloroethene		7.1	1.1	6.6	29	18	39	44	610	96	0.36	2.1	0.17	0.028	0.46	0.38	0.37	1.6 U	10 U	10 U	0.28	0.73	0.33	2.1	1.6	14	59	126	120	160
Tetrahydrofuran		0.36 U	0.41 U	0.46 U	0.18 U	0.17 U	0.24 U	0.23 U	2.9 U	0.89 U	0.0086 U	0.04 U	0.036 U	0.0035 U	0.019 U	0.016 U	0.016 U	0.09 U	4.6 U	4.5 U	0.005 U	0.0056 U	0.0034 U	0.73 U	0.069 U	0.17 U	1.8 U	2.8 U	3.4 U	
Toluene		0.46 U	0.52 U	0.58 U	0.23 U	0.21 U	0.3 U	0.3 U	3.6 U	1.1 U	0.12	0.1	0.081	0.098	0.086	0.11	0.1	0.88 U	5.8 U	5.7 U	0.08	0.007 U	0.066	0.94 U	0.096	0.21 U	2.2 U	2.8 U	4.3 U	
Trans-1,2-Dichloroethene		0.49 U	0.55 U	0.62 U	0.24 U	0.22 U	0.32 U	0.32 U	3.8 U	1.2 U	0.012 U	0.053 U	0.049 U	0.0047 U	0.026 U	0.022 U	0.022 U	0.92 U	6.2 U	6 U	0.0068 U	0.0074 U	0.0046 U	0.99 U	0.091 U	0.22 U	2.4 U	3 U	4.5 U	
Trans-1,3-Dichloropropene		0.56 U	0.63 U	0.7 U	0.27 U	0.26 U	0.36 U	0.36 U	4.4 U	1.4 U	0.013 U	0.061 U	0.054 U	0.0054 U	0.03 U	0.025 U	0.025 U	1 U	7 U	6.9 U	0.0077 U	0.0085 U	0.0053 U	1.1 U	0.1 U	0.26 U	2.7 U	3.4 U	5.2 U	
Trichloroethene		7.9	1.4	6.9	3.5	3.5	5.9	6.5	66	13	0.056	0.38	0.35	0.0064 U	0.035 U	0.03 U	0.03 U	1.2 U	8.4 U	8.2 U	1.4	1.9	0.84	1.3 U	0.5	2.6	37	71	71	83
Trichlorofluoromethane (Freon 11)		59	72	61	19	22	26	28	270	100	1.7	4.8	4	0.26	1.9	2.1	2	92	500	470	1.8	2.3	0.71	140	9	26	170	400	390	600
Vinyl Chloride		0.32 U	0.36 U	0.4 U	0.15 U	0.14 U	0.2 U	0.2 U	2.5 U	0.76 U	0.0075 U	0.034 U	0.031 U	0.003 U	0.017 U	0.014 U	0.014 U	0.6 U	4 U	3.9 U	0.0044 U	0.0048 U	0.003 U	0.64 U	0.058 U	0.14 U	1.5 U	1.9 U	2.9 U	160

Notes:

All concentrations are reported in milligrams per cubic meter (mg/m³).

All samples analyzed by EPA Method TO-15

U = Analyte not detected at a concentration greater than the reporting limit shown

J = Estimated concentration

Table 2
 Omega Chemical Superfund Site
 Summary of Soil Analytical Data

Analyte	Probe Number	MIP21-B7				MIP22-B5		MIP8-B4						VP21-B6							
		Sample Depth (feet bgs)		29	35	44	55	26	36	29	33	40	56	56	8	20	29	35	35	43	48
		Sample Date	09-Mar-06	09-Mar-06	09-Mar-06	09-Mar-06	09-Mar-06	07-Mar-06	08-Mar-06	08-Mar-06	08-Mar-06	08-Mar-06	08-Mar-06	08-Mar-06							
Ethylbenzene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	0.88 U	1.2 U	
Isopropylbenzene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	0.88 U	1.2 U	
m,p-Xylenes		1.8 U	1.6 U	2 U	2 U	1.8 U	1.9 U	200 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U	2 U	1.7 U	1.9 U	1.9 U	1.8 U	2.4 U		
Methyl Tert-Butyl Ether		1.8 U	1.6 U	2 U	2 U	1.8 U	1.9 U	200 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U	2 U	1.7 U	1.9 U	1.9 U	1.8 U	2.4 U		
Methylene Chloride		9.1 U	7.8 U	9.8 U	10 U	9.2 U	9.5 U	1000 U	9.7 U	8.7 U	12	14	9.3 U	10 U	8.6 U	9.4 U	9.3 U	8.8 U	12 U		
Naphthalene		9.1 U	7.8 U	9.8 U	10 U	9.2 U	9.5 U	1000 U	9.7 U	8.7 U	8.9 U	9.3 U	9.3 U	10 U	8.6 U	9.4 U	9.3 U	8.8 U	12 U		
n-Butylbenzene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
n-Propylbenzene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
o-Xylene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
p-Isopropyltoluene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
Sec-Butylbenzene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
Styrene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
Tert-Amyl Methyl Ether (TAME)		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
Tert-Butyl Alcohol		18 U	16 U	20 U	20 U	18 U	19 U	2000 U	19 U	17 U	18 U	19 U	19 U	20 U	17 U	19 U	19 U	18 U	24 U		
Tert-Butylbenzene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
Tetrachloroethene		750	1900	2600	150	840	1600	2400	1200	1600	3300	5200	620	160	960	860	1100	1900	610		
Toluene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	2.4	2.4	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		
trans-1,2-Dichloroethene		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	1	2.3	2.6	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.91	1.2 U		
trans-1,3-Dichloropropene		1.8 U	1.6 U	2 U	2 U	1.8 U	1.9 U	200 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U	2 U	1.7 U	1.9 U	1.9 U	1.8 U	2.4 U		
Trichloroethene		22	62	110	19	7.7	52	200 U	38	69	98	120	17	9.4	16	41	41	72	38		
Trichlorofluoromethane (Freon 11)		9.1 U	13	16	10 U	9.2 U	12	1000 U	9.7 U	8.7 U	8.9 U	9.3 U	9.3 U	10 U	8.6 U	9.6	9.3 U	18	12 U		
Vinyl Acetate		9.1 U	7.8 U	9.8 U	10 U	9.2 U	9.5 U	1000 U	9.7 U	8.7 U	8.9 U	9.3 U	9.3 U	10 U	8.6 U	9.4 U	9.3 U	8.8 U	12 U		
Vinyl Chloride		0.91 U	0.78 U	0.98 U	1 U	0.92 U	0.95 U	100 U	0.97 U	0.87 U	0.89 U	0.93 U	0.93 U	1 U	0.86 U	0.94 U	0.93 U	0.88 U	1.2 U		

Notes:

All concentrations are reported in micrograms per kilogram (ug/Kg).

All parameters analyzed using EPA Method 8260B, except for 1,4-dioxane, which was analyzed using EPA Method 8270C (modified).

U = Analyte not detected at a concentration greater than the reporting limit shown

ATTACHMENT A

MIP LOGS FOR THE FEBRUARY/MARCH 2006 SAMPLING



MIP REPORT

**Omega
Whittier, CA**



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21	MIP Data Summary



Client: CDM
18581 Teller Ave., Suite 200
Irvine, CA 92612

Start Date: 2/27/2006
Completed Date: 3/1/2006

Site Address: 12504 East Whittier Blvd., Whittier, CA
Project Name: Omega

Project Scope: Collected Membrane Interface Probe logs from 6 boring locations from approximately surface to as deep as 61 feet bgs to identify possible DNAPL plume, and contaminante plume.

Project Information: ~ MIP-30 = Probe broke while retracting.

MIP Boring and Confirmation Sampling Summary

Date Sampled	Time Sampled	Boring Name	Total Depth	Confirmation Samples Soil	Confirmation Samples Groundwater
Feb 27 2006	08:48	MIP-25	55.3		
Feb 27 2006	13:36	MIP-26	52.5		
Feb 28 2006	07:57	MIP-29	60.9		
Feb 28 2006	10:43	MIP-30	60.6		
Mar 01 2006	08:37	MIP-28	52.8		
Mar 01 2006	11:10	MIP-27	53.1		



Quality Control: Vironex utilizes a response test* prior to each MIP boring. A solution containing water, Trichloroethene & Toluene are mixed and transferred into a galvanized test pipe. The MIP is then lowered into the test pipe for 45 seconds and then extracted. The trip time** is then noted and entered into the SC4000 MIP computer.

*Response Test - A test that ensures that the MIP system is working correctly.

**Trip Time - Time it takes for the standard to enter the MIP probe, at the probe membrane, till the time a significant response is noticed on the SC 4000 Computer

MIP Components

- Geoprobe 6600
- Used:** • FC 4000 MIP Computer
- Flow Control Box
- HP Gas Chromatograph
- ECD (Electron Capture Detector)
- PID (Photo Ionization Detector)
- FID (Flame Ionization Detector)
- 150' Trunk Line
- 1.5" MIP Probe
- 1.5" Drive Rods

Soil Confirmation No confirmation samples were collected

**Qualitative Analysis
(Identification):**

The MIP system will detect most VOC's (Volatile Organic Compounds) which have the capability of migrating through the membrane. The ECD (Electron Capture Detector) will typically detect chlorinated compounds. The PID will typically detect aromatic and double bonded compounds, typical of gasoline components and some solvents. At high concentrations the ECD, PID and FID may detect other compounds not normally associated with the detector. Physical soil samples which are prepared by EPA Method 5035, and analyzed by EPA Method 8260, may be semi correlated with the MIP responses. The MIP responses are semi-correlated with most detected compounds, even those which are not reported nor detected by EPA Method 8260.

Lithology: The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will have a higher EC signal. While coarser grained sediments, sands and gravel, will have a lower EC signal. Lithology should be correlated with a physical soil sample.

*Frank Stolfi
National Director of MIP Services*



Client: CDM
18581 Teller Ave., Suite 200
Irvine, CA 92612

Start Date: 2/27/2006
Completed Date: 3/1/2006

Site Address: 12504 East Whittier Blvd., Whittier, CA
Project Name: Omega

MIP Quality Control

Standard Summary

Boring Name	Date	Time	Standard	PID Response	ECD Response	Pressure (PSI)	Response Time (s)
QA/QC1	Feb 27 2006	08:18	1ppm TCE & Toluene	Yes	Yes	13.44	65
MIP-25	Feb 27 2006	08:48				13.30	65
QA/QC2	Feb 27 2006	13:27	1ppm TCE & Toluene	Yes	Yes	13.13	68
MIP-26	Feb 27 2006	13:36				13.05	68
QA/QC3	Feb 28 2006	07:50	1ppm TCE & Toluene	Yes	Yes	13.71	70
MIP-29	Feb 28 2006	07:57				13.43	70
QA/QC4	Feb 28 2006	10:20	1ppm TCE & Toluene	Yes	Yes	13.18	70
MIP-30	Feb 28 2006	10:43				13.01	70
QA/QC5	Mar 01 2006	07:59	1ppm TCE & Toluene	Yes	Yes	11.33	83
MIP-28	Mar 01 2006	08:37				11.25	83
QA/QC6	Mar 01 2006	10:09	1ppm TCE & Toluene	Yes	Yes	11.51	83
MIP-27	Mar 01 2006	11:10				11.76	83

End of Day QA QC Summary

Boring Name	Date	Time	Standard	PID Response	ECD Response	Pressure (PSI)	Response Time (s)
End of Day 1	Feb 27 2006	15:18	1ppm TCE & Toluene	Yes	Yes	12.87	70
None done due to broke probe							
End of Day 3	Mar 01 2006	14:09	1ppm TCE & Toluene	Yes	Yes	11.51	85



SITE MAP



Confirmation Locations

Sample ID	TPHg mg/Kg*	PID Response	Soil Conductivity Response	Comments
			Not Data Provided	

* TPHg = Total Petroleum Hydrocarbons Gas

MIP Log Results by Boring - Detector Reading vs. Depth

Client CDM

Boring I.D.: MIP-25

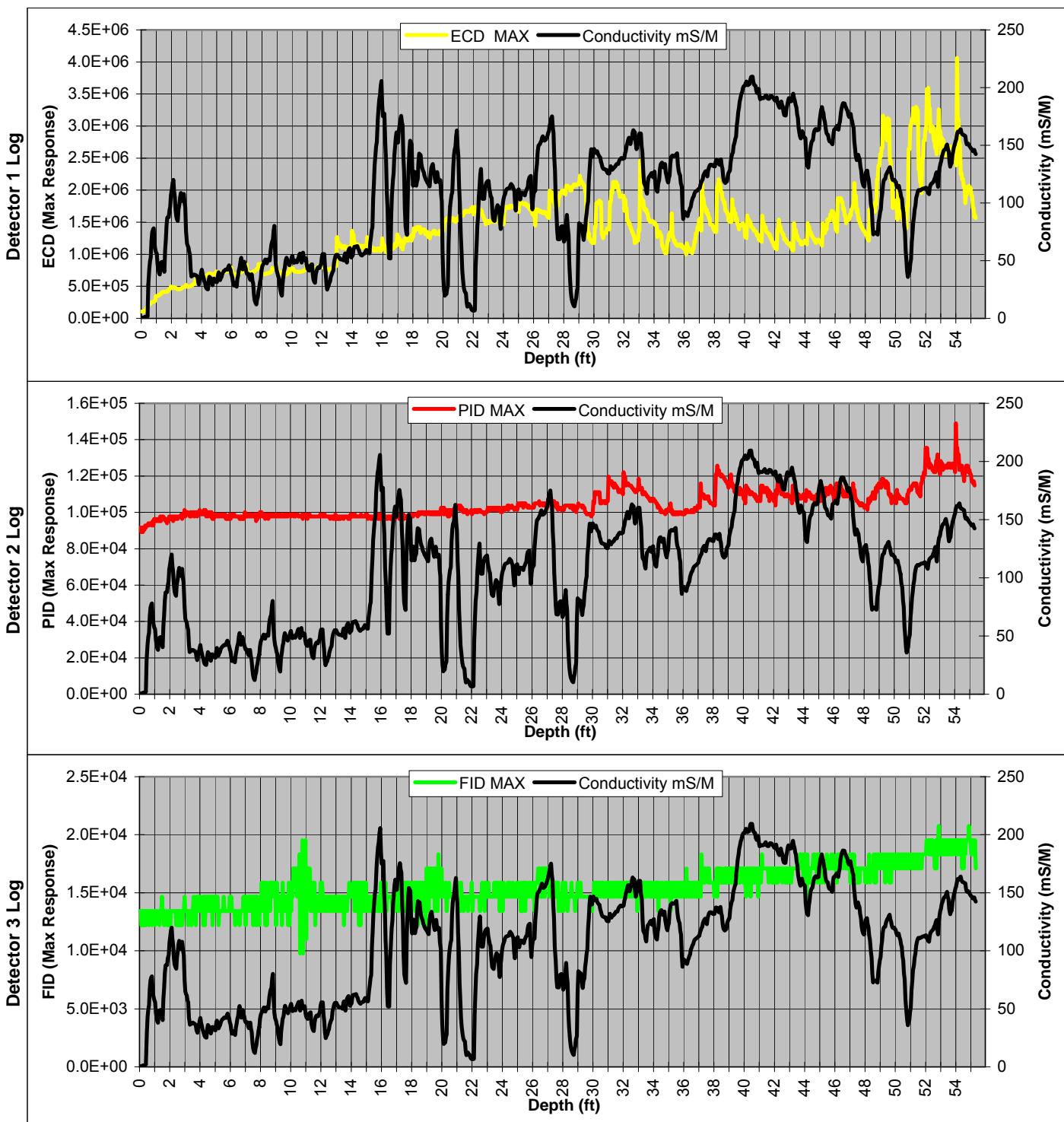
Date: Feb 27 2006

Time: 08:48

Detector 1 : Electron Capture (ECD)

Detector 2 : Photo Ionization (PID)

Detector 3 : Flame Ionization (FID)



MIP Log Results by Boring - Detector Reading vs. Depth

Client #REF! CDM

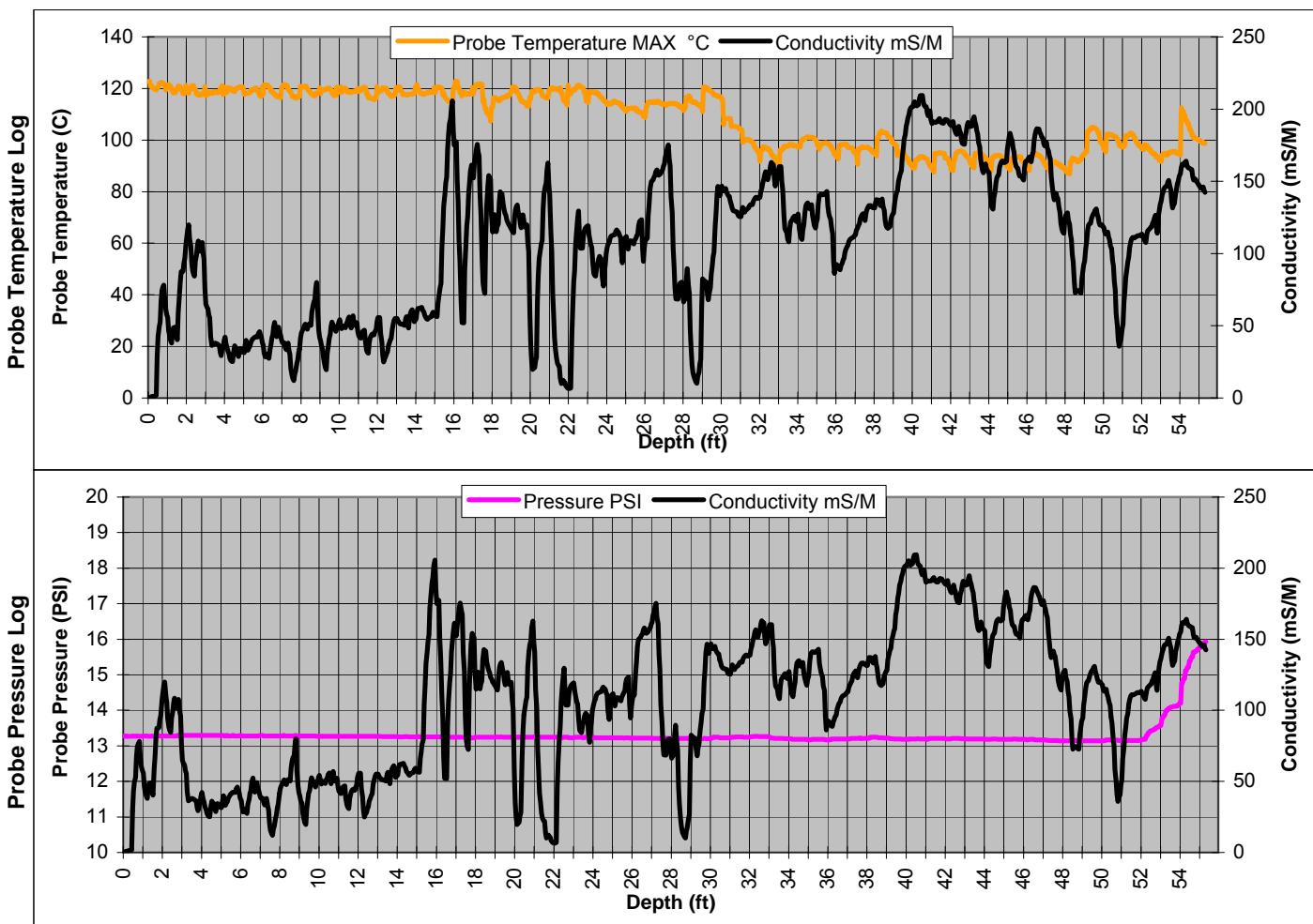
Boring I.D.: MIP-25

Date: Feb 27 2006

Time: 08:48

Graph 1 : Probe Temperature (C)

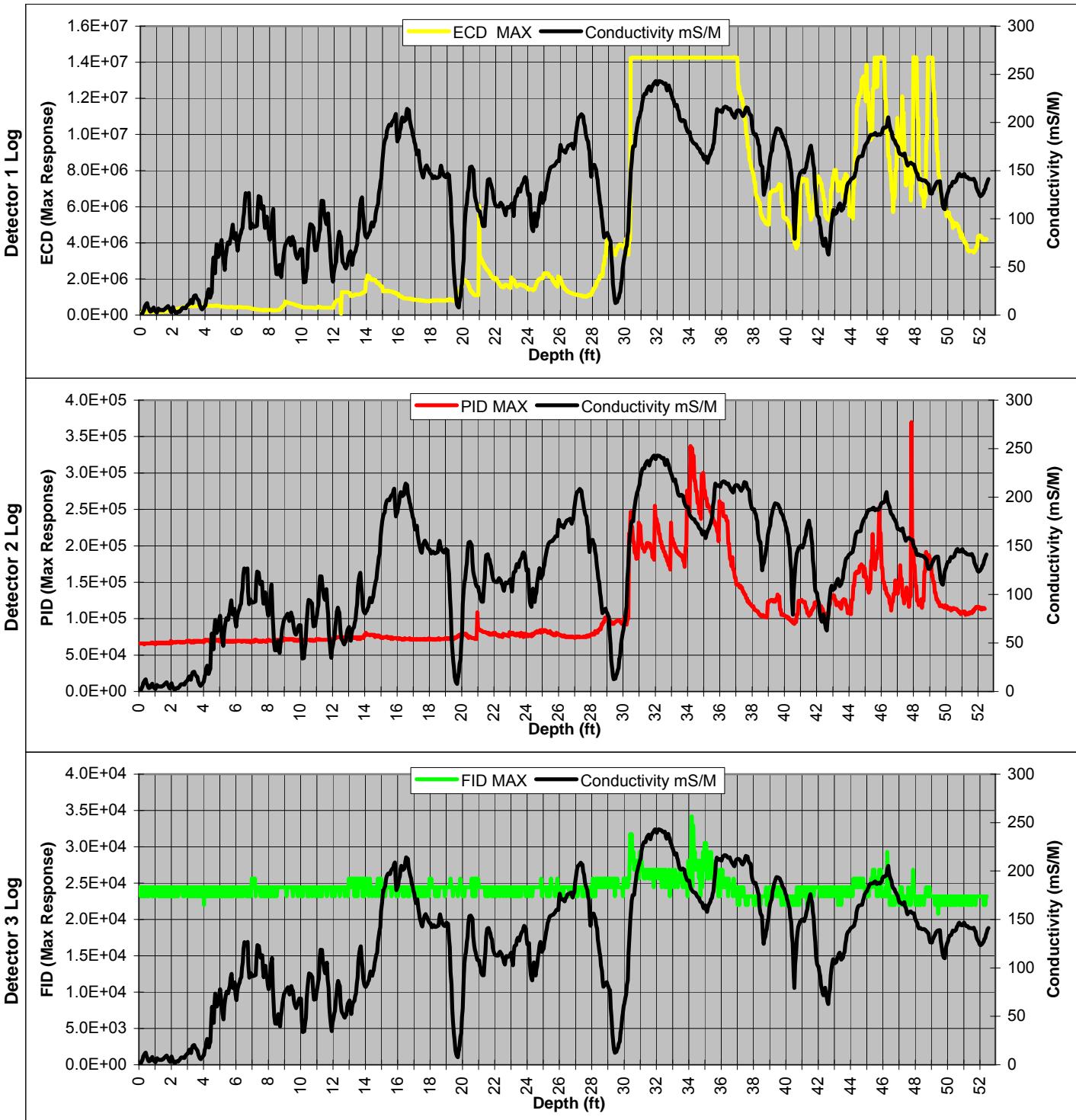
Graph 2 : Probe Pressure (PSI)



Explanation: None

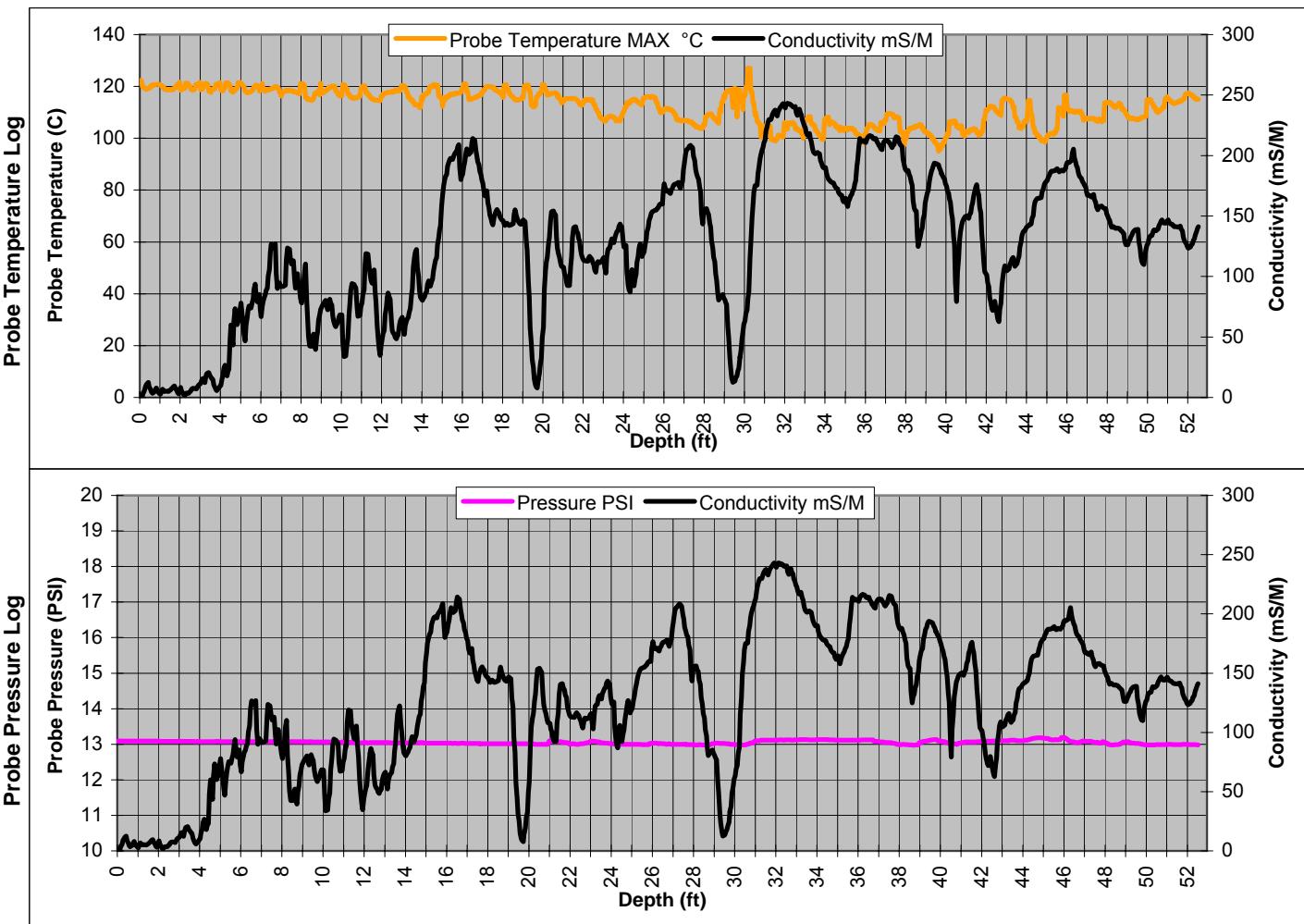
MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM Boring I.D.: MIP-26 Detector 1 : Electron Capture (ECD)
 Date: Feb 27 2006 Detector 2 : Photo Ionization (PID)
 Time: 13:36 Detector 3 : Flame Ionization (FID)



MIP Log Results by Boring - Detector Reading vs. Depth

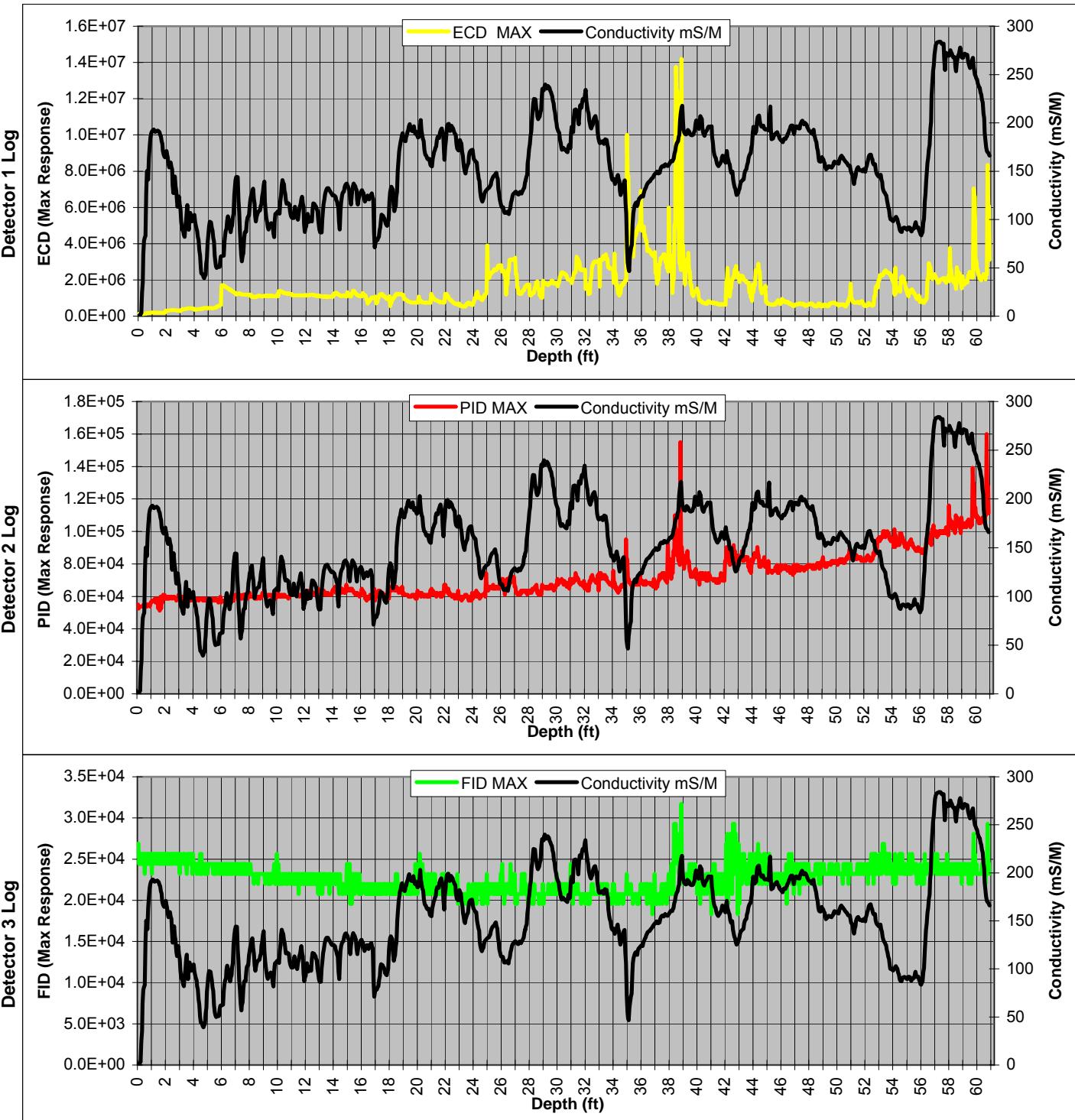
Client: CDM Boring I.D.: MIP-26 Graph 1 : Probe Temperature (C)
 Date: Feb 27 2006 Graph 2 : Probe Pressure (PSI)
 Time: 13:36



Explanation: Cleared to 5 ft. with hand auger by Vironex.

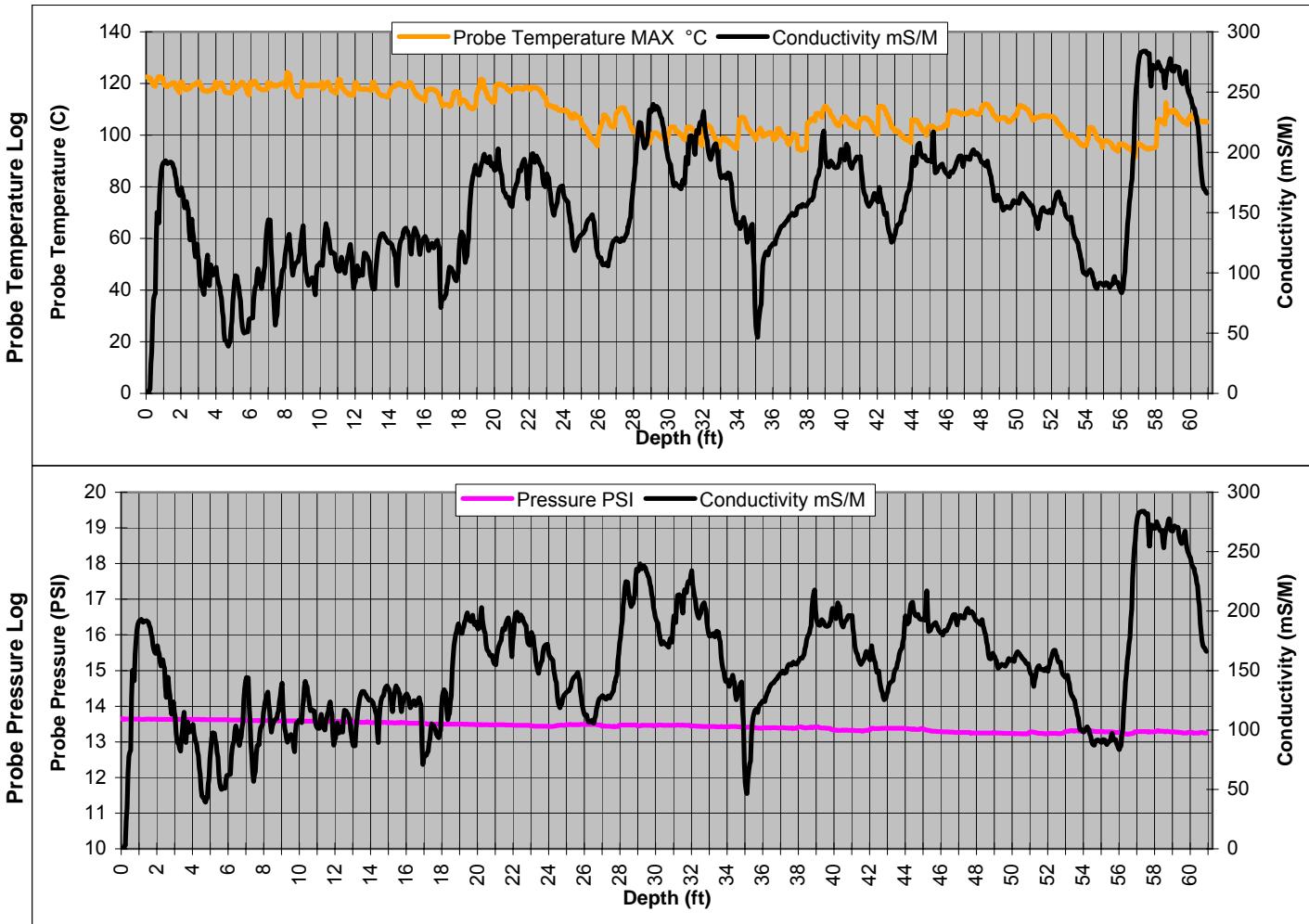
MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM Boring I.D.: MIP-29 Detector 1 : Electron Capture (ECD)
 Date: Feb 28 2006 Detector 2 : Photo Ionization (PID)
 Time: 07:57 Detector 3 : Flame Ionization (FID)



MIP Log Results by Boring - Detector Reading vs. Depth

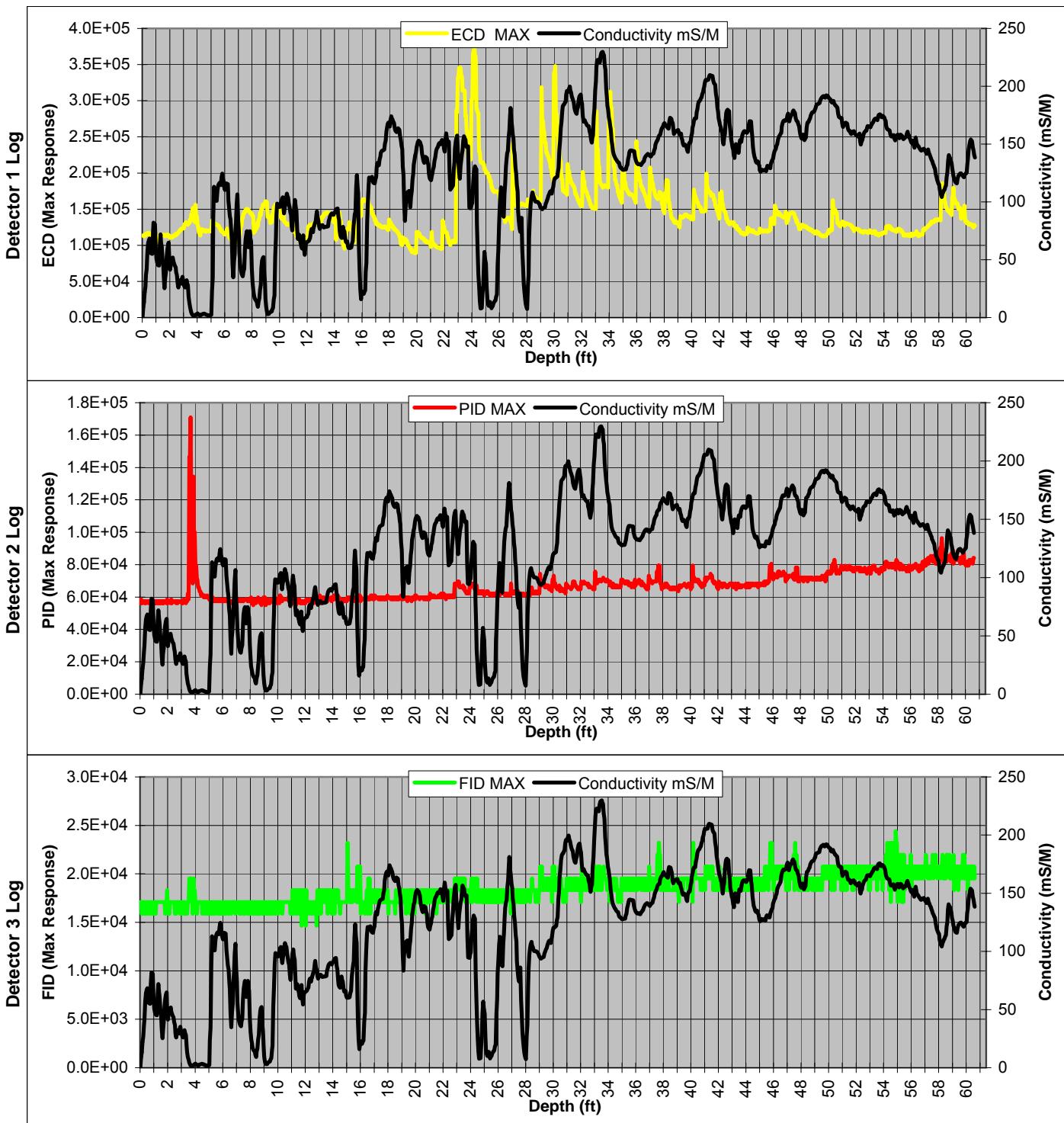
Client: CDM Boring I.D.: MIP-29 Graph 1 : Probe Temperature (C)
 Date: Feb 28 2006 Graph 2 : Probe Pressure (PSI)
 Time: 07:57



Explanation: None

MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM Boring I.D.: MIP-30 Detector 1 : Electron Capture (ECD)
 Date: Feb 28 2006 Detector 2 : Photo Ionization (PID)
 Time: 10:43 Detector 3 : Flame Ionization (FID)



MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM

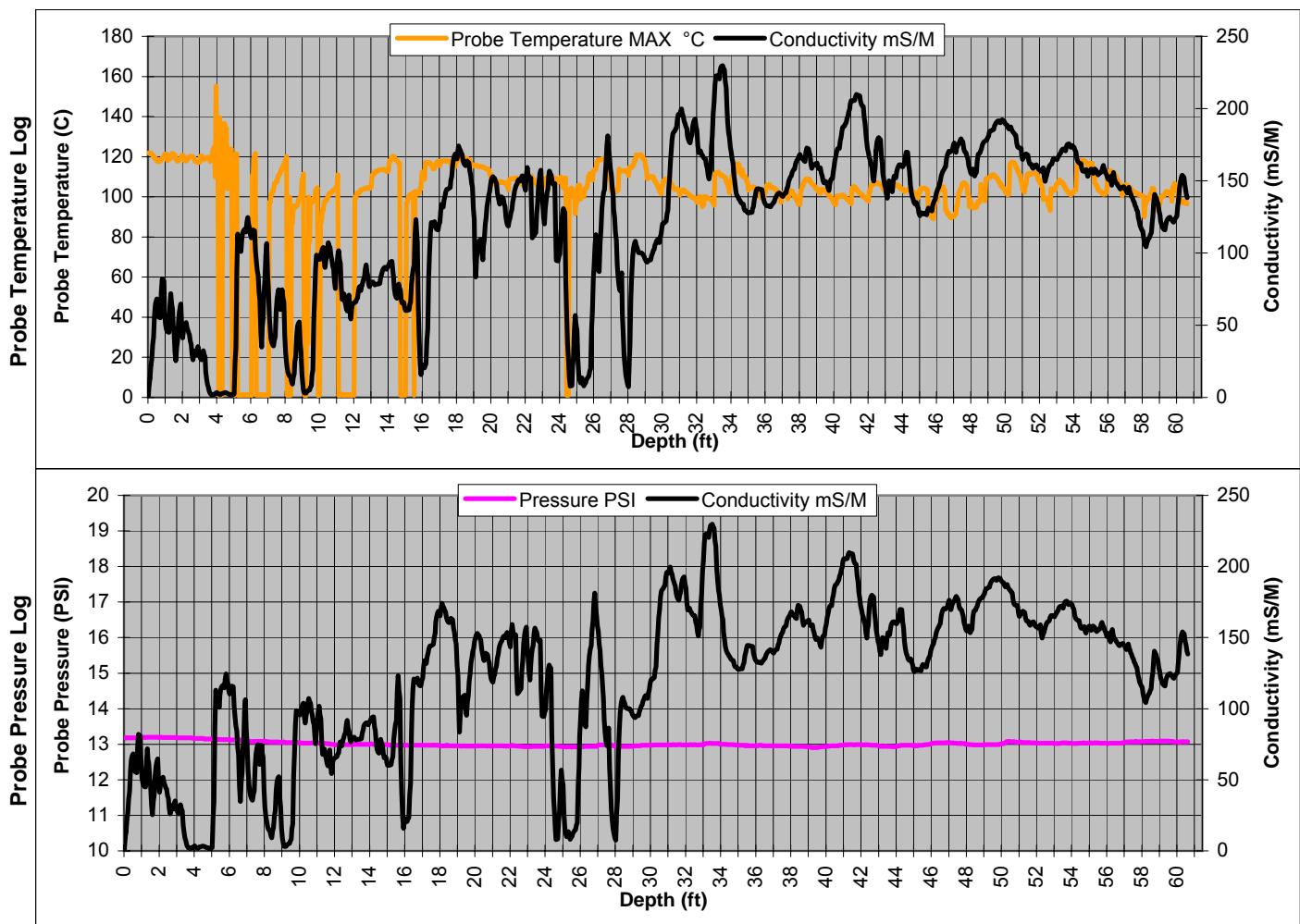
Boring I.D.: MIP-30

Graph 1 : Probe Temperature (C)

Date: Feb 28 2006

Graph 2 : Probe Pressure (PSI)

Time: 10:43



Explanation: While retracting probe lost 28 ft of 4ft. Rods and MIP Probe.

MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM

Boring I.D.: MIP-28

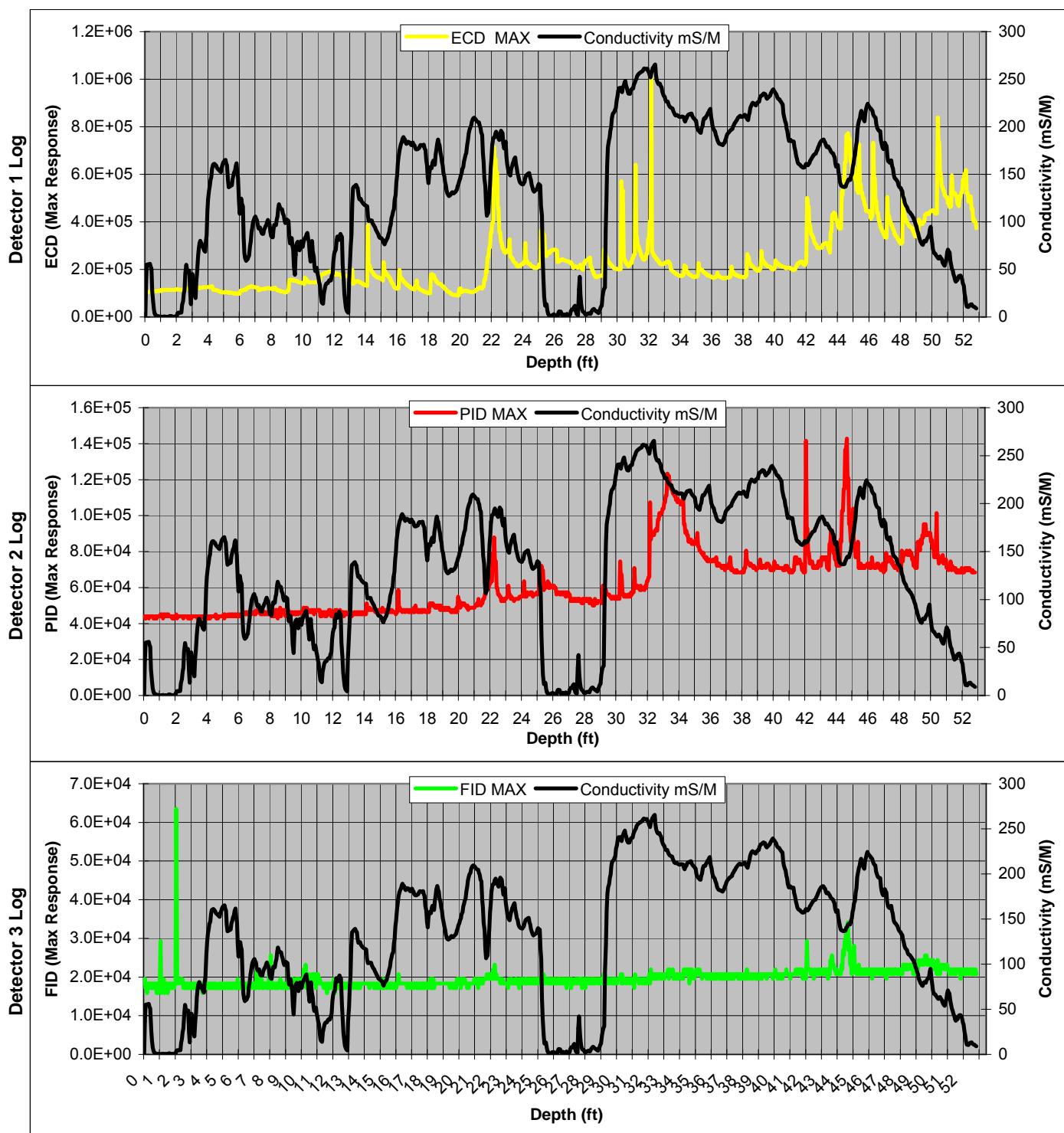
Detector 1 : Electron Capture (ECD)

Date: Mar 01 2006

Detector 2 : Photo Ionization (PID)

Time: 08:37

Detector 3 : Flame Ionization (FID)



MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM

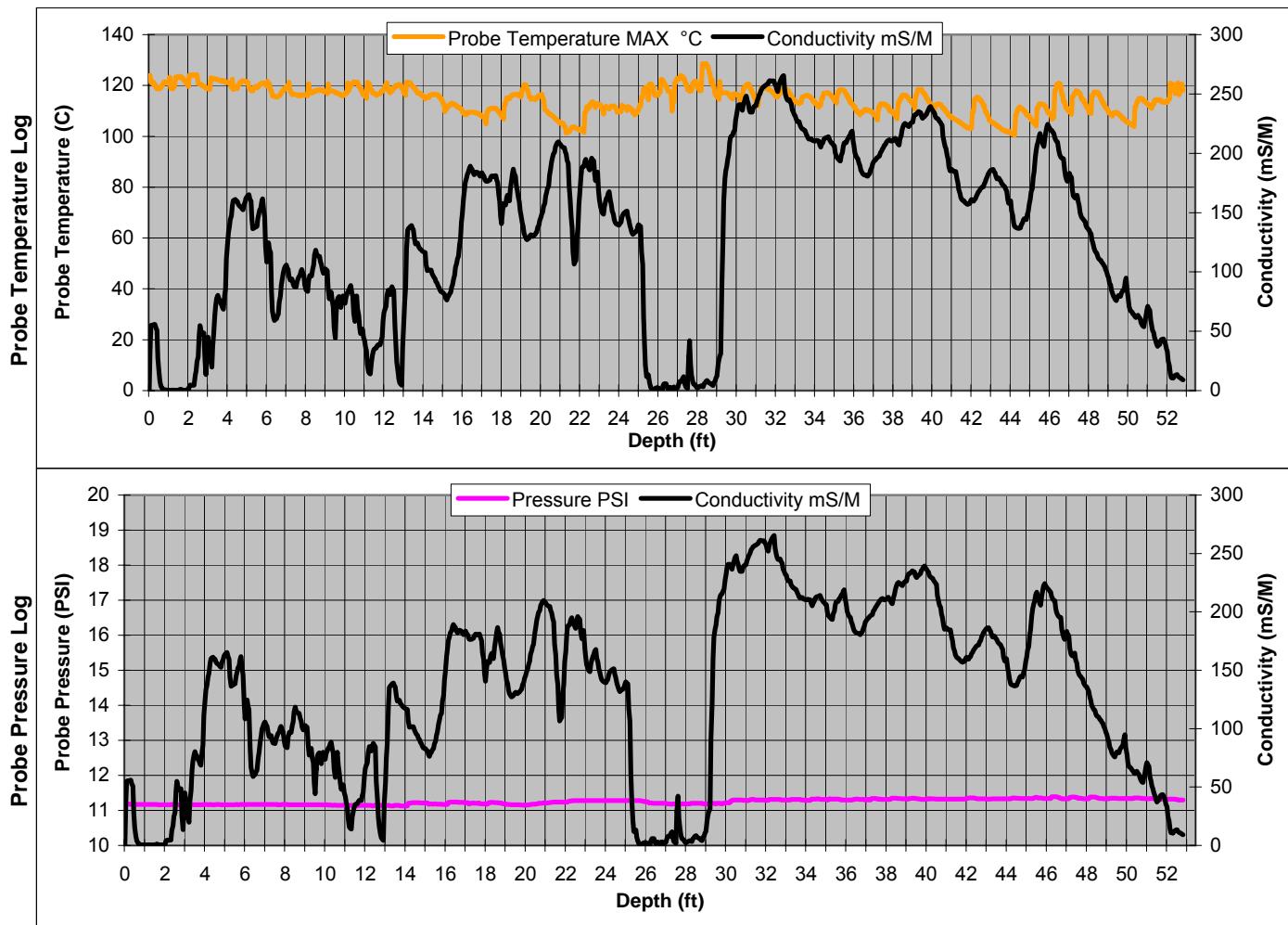
Boring I.D.: MIP-28

Graph 1 : Probe Temperature (C)

Date: Mar 01 2006

Graph 2 : Probe Pressure (PSI)

Time: 08:37



Explanation: Hand auger to 5 ft. By Vironex.

MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM

Boring I.D.: MIP-27

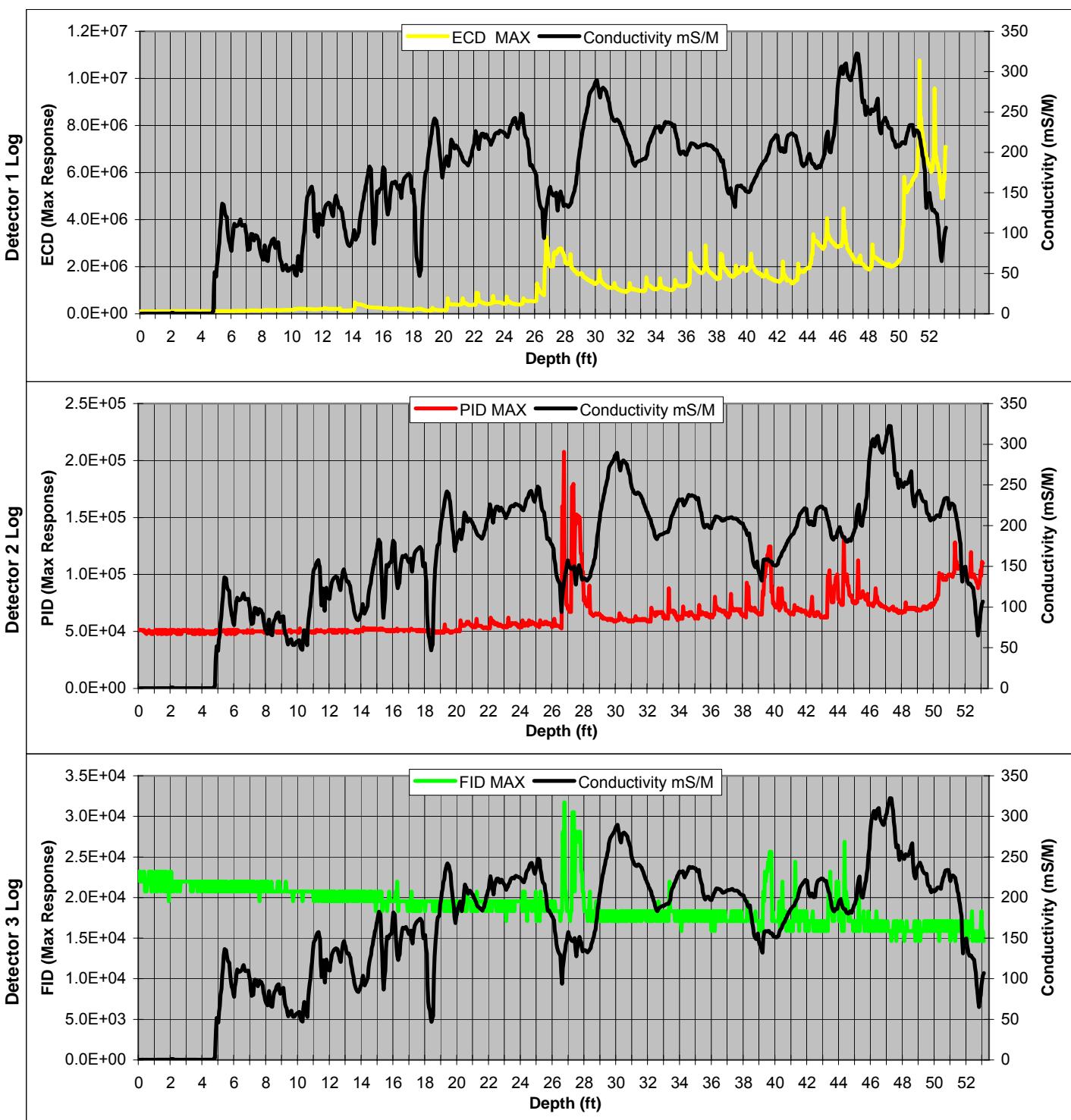
Detector 1 : Electron Capture (ECD)

Date: Mar 01 2006

Detector 2 : Photo Ionization (PID)

Time: 11:10

Detector 3 : Flame Ionization (FID)



MIP Log Results by Boring - Detector Reading vs. Depth

Client: CDM

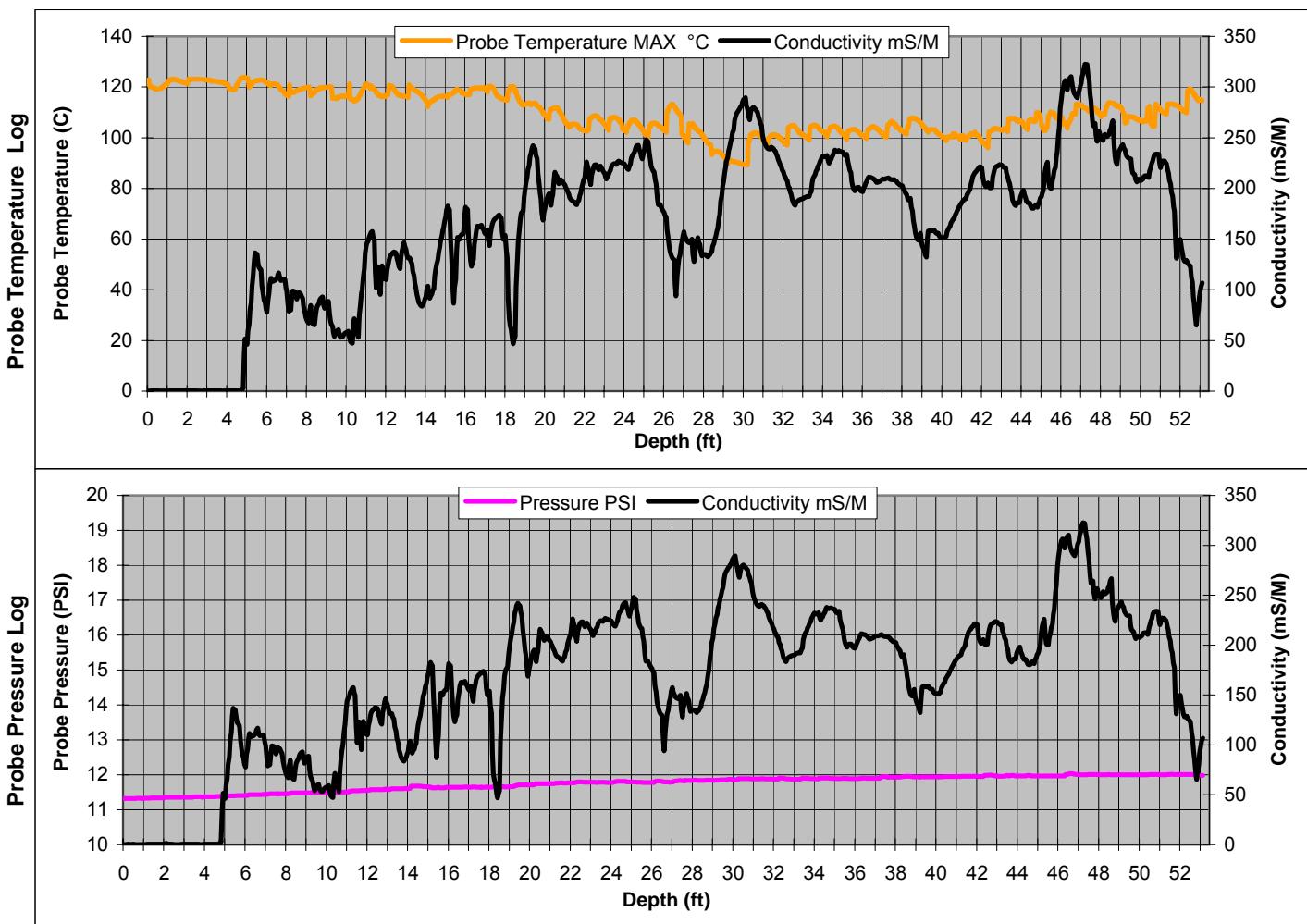
Boring I.D.: MIP-27

Graph 1 : Probe Temperature (C)

Date: Mar 01 2006

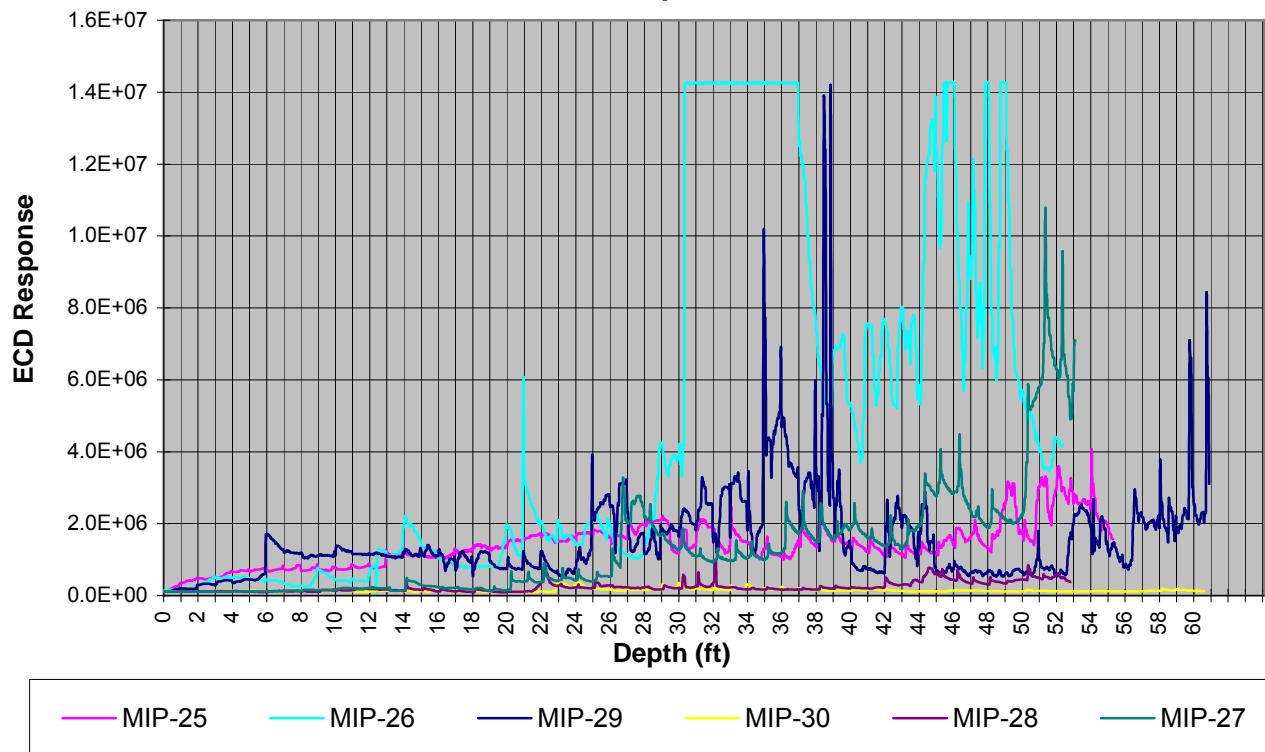
Graph 2 : Probe Pressure (PSI)

Time: 11:10

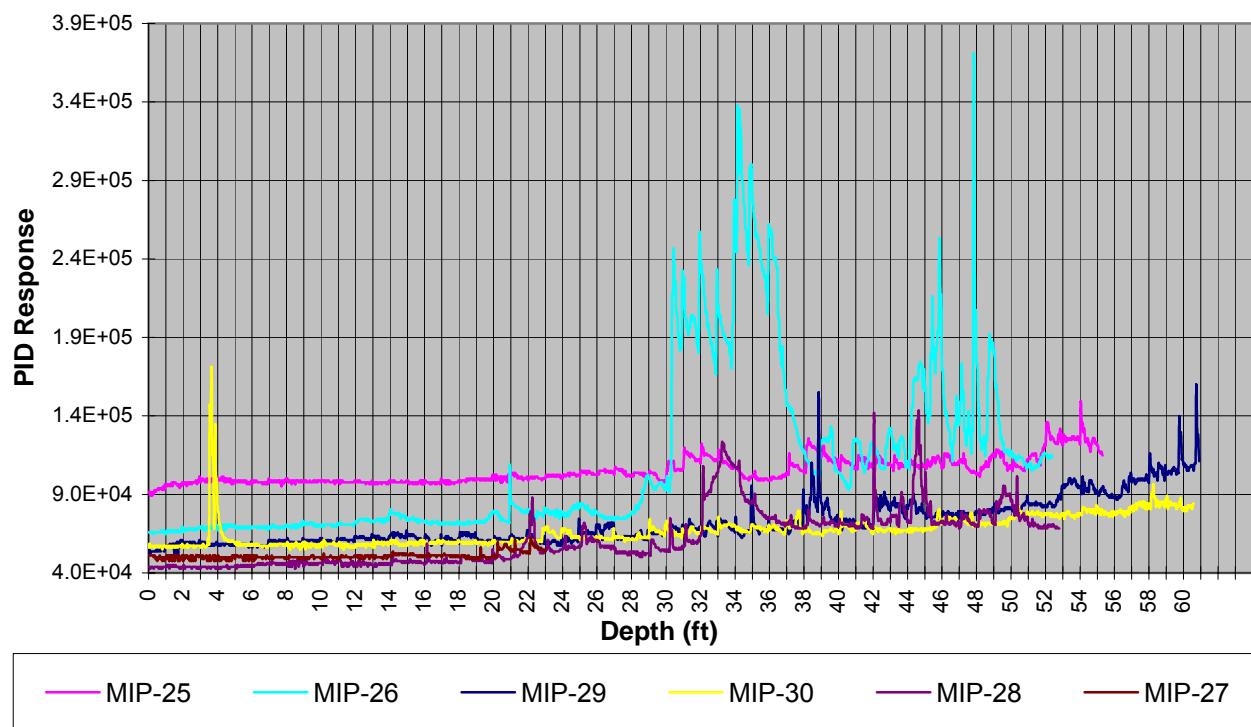


Explanation: Hand auger to 5ft. By Vironex.

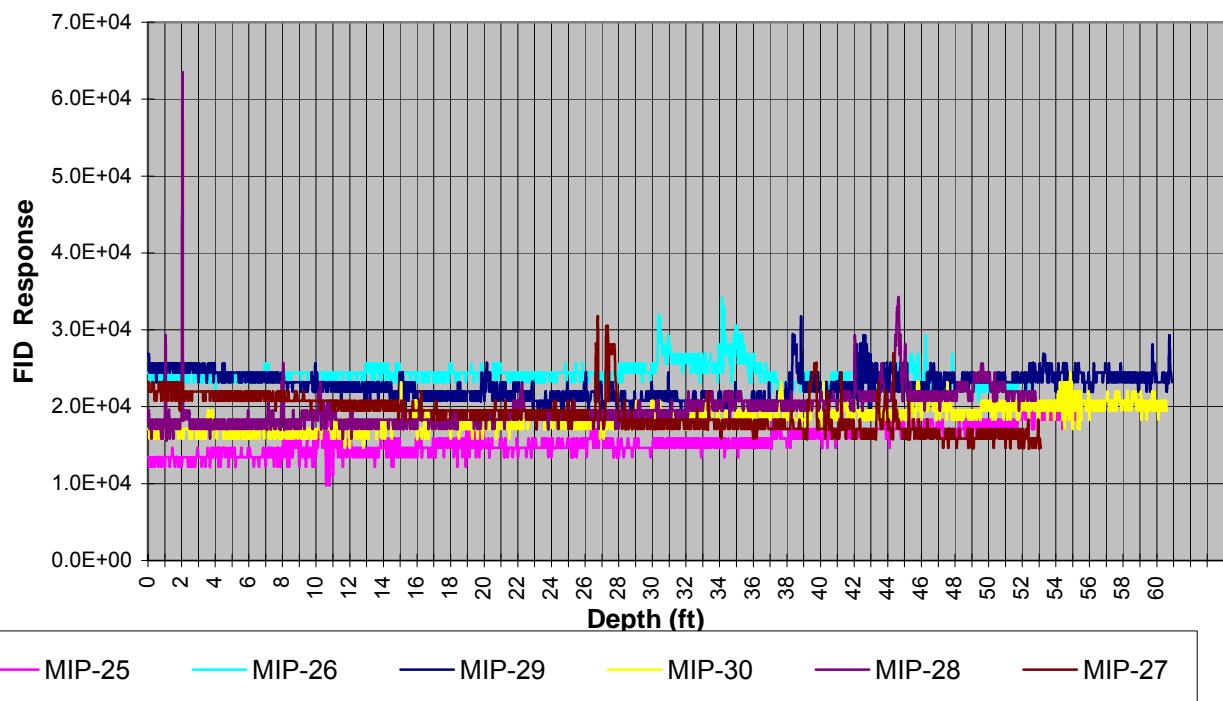
Maximum ECD Response Same Scale



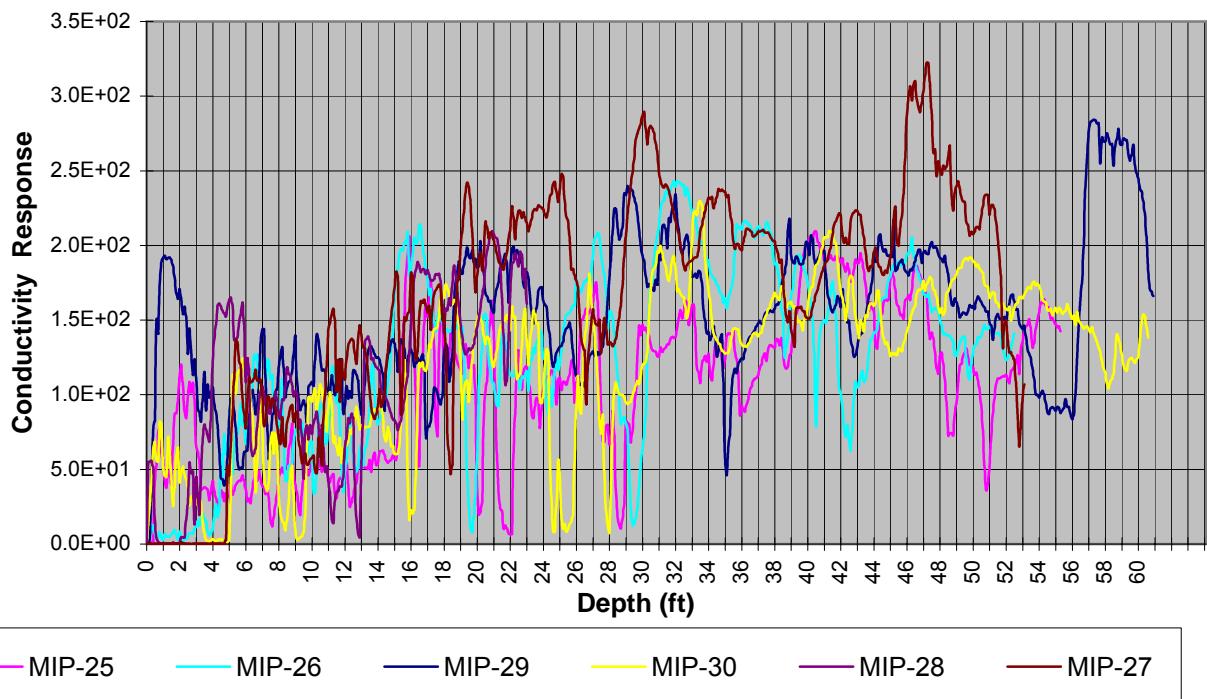
Maximum PID Response Same Scale



Maximum FID Response Same Scale



Conductivity Response Same Scale



ATTACHMENT B

SOIL PHYSICAL PROPERTIES DATA

FIELD SCREENING RESULTS

PHYSICAL PROPERTIES DATA

PROJECT NAME: Omega Chemical
 PROJECT NO: 10500-37240

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENT. (1)	MOISTURE CONTENT (% wt)	BULK DENSITY (g/cc)	TOTAL POROSITY, % Vb (2)	TOTAL ORGANIC CARBON mg/kg	ASTM D5084	
							25.0 PSI CONFINING STRESS	NATIVE STATE EFFECTIVE PERMEABILITY TO WATER (3,4) (millidarcy)
								NATIVE STATE EFFECTIVE HYDRAULIC CONDUCTIVITY (3,4) (cm/s)
MIP8-B4-8	8.70	V	21.4	1.52	42.8	1750	--	--
MIP8-B4-29	29.15	V	25.6	1.52	42.4	2150	--	--
MIP8-B4-33	33.15	V	20.3	1.77	33.0	1750	0.884	8.33E-07
MIP8-B4-40	39.15	V	24.9	1.56	40.9	910	--	--
MIP8-B4-56	56.85	V	19.8	1.68	36.7	770	--	--
MIP22-B5-26	26.80	V	15.8	1.64	38.2	790	--	--
MIP22-B5-36	37.90	V	18.8	1.66	37.6	690	--	--
VP21-B6-20	20.90	V	22.1	1.59	40.2	760	--	--
VP21-B6-29	29.15	V	22.7	1.57	40.9	670	--	--
VP21-B6-35	35.80	V	18.2	1.66	37.4	740	0.887	8.30E-07
VP21-B6-43	43.30	V	19.6	1.58	40.3	640	--	--
VP21-B6-48	49.90	V	22.6	1.65	38.0	1300	--	--
MIP21-B7-29	29.30	V	23.5	1.54	41.6	1200	--	--
MIP21-B7-35	35.80	V	21.8	1.59	39.6	1700	0.706	6.63E-07
MIP21-B7-44	44.20	V	27.5	1.55	49.1	1200	--	--
MIP21-B7-55	53.80	V	12.0	1.63	39.7	510	--	--

(1) Sample Orientation: H = horizontal; V = vertical (2) Total Porosity = no pore fluids in place; all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids (3) Native State = As received with pore fluids in place (4) Permeability to water and conductivity measured at saturated conditions Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

SUMMARY OF FIELD SCREENING RESULTS FOR SOIL GAS SAMPLES OMEGA CHEMICAL SUPERFUND SITE

Sample Location	Sample Depth (ft bgs)		Sample Date	Time	Methane (%)	Carbon Dioxide		
	(%)	Oxygen (%)				PID (ppmv)		
OC-SG-022-VP29-030606	22	3/6/2006	11:55 AM	0.1	1.8	16.8	68.7/1.5*	
OC-SG-029-VP29-030606	29	3/6/2006	11:58 AM	0.1	2.3	17.3	85.4/1.5	
OC-SG-048-VP29-030606	48	3/6/2006	12:00 PM	0.1	3.4	16.1	189.3/1.5	
OC-SG-021.5-VP20-030606	21.5	3/6/2006	12:06 PM	0.1	3.5	17.8	24.4/1.5	
OC-SG-029-VP20-030606	29	3/6/2006	12:02 PM	0.1	1.8	18.1	12.2/1.5	
OC-SG-051-VP20-030606	51	3/6/2006	12:04 PM	0.0	0.5	19.8	24.4/1.5	
OC-SG-027-VP24-030606	27	3/6/2006	2:10 PM	0.1	0.1	21.1	7.6/1.5	
OC-SG-035-VP24-030606	35	3/6/2006	2:12 PM	0.1	1.7	18.7	33.5/1.5	
OC-SG-039-VP24-030606	39	3/6/2006	2:15 PM	0.1	1.1	19.2	25.9/1.5	
OC-SG-036-VP25-030606	36	3/6/2006	2:45 PM	0.1	0.7	21.3	3.0/1.5	
OC-SG-029-VP25-030606	29	3/6/2006	2:49 PM	0.1	2.5	18.5	3.0/1.5	
OC-SG-025-VP25-030606	25	3/6/2006	2:55 PM	0.0	0.0	22.5	1.5/1.5	
OC-SG-020-VP28-030706	20	3/7/2006	9:35 AM	0.1	0.4	18.4	33.5/1.6	
OC-SG-029-VP28-030706	29	3/7/2006	9:37 AM	0.1	0.2	19.6	14.4/1.6	
OC-SG-043-VP28-030706	43	3/7/2006	9:40 AM	0.1	0.3	20.1	25.6/1.6	
OC-SG-048-VP21-030806	48	3/8/2006	12:45 PM	0.0	1.0	17.1	222/1.0	
OC-SG-043-VP21-030806	43	3/8/2006	12:50 PM	0.0	4.0	14.6	591/1.0	
OC-SG-035-VP21-030806	35	3/8/2006	12:55 PM	0.0	0.4	20.1	48.3/1.0	
OC-SG-029-VP21-030806	29	3/8/2006	1:10 PM	0.1	0.2	19.2	44.0/1.0	
OC-SG-020-VP21-030806	20	3/8/2006	1:15 PM	0.1	0.5	20.5	35.4/1.0	
OC-SG-039-VP22-030806	39	3/8/2006	1:35 PM	0.1	0.0	22.8	1.0/1.0	
OC-SG-027-VP22-030806	27	3/8/2006	1:40 PM	0.1	5.6	16.0	11.1/1.0	
OC-SG-018-VP22-030806	18	3/8/2006	2:03 PM	0.1	1.2	19.6	7.5/0.0	
OC-SG-045-VP23-030906	45	3/9/2006	9:05 AM	0.1	2.9	11.0	8.8/1.7	
OC-SG-029-VP23-030906	29	3/9/2006	9:14 AM	0.1	4.2	14.2	5.2/1.7	
OC-SG-022-VP23-030906	22	3/9/2006	9:20 AM	0.1	0.5	19.2	5.2/1.7	

Notes:

Samples analyzed using Land Tech and TO-15 in lab

If cell is blank, analyte was not reported.

If cell is blank, analyte was not reported
ft bas = Feet below ground surface

PPMV = Parts per million per unit volume

PID = Photoionization Detector

* - Second PID Reading represents background